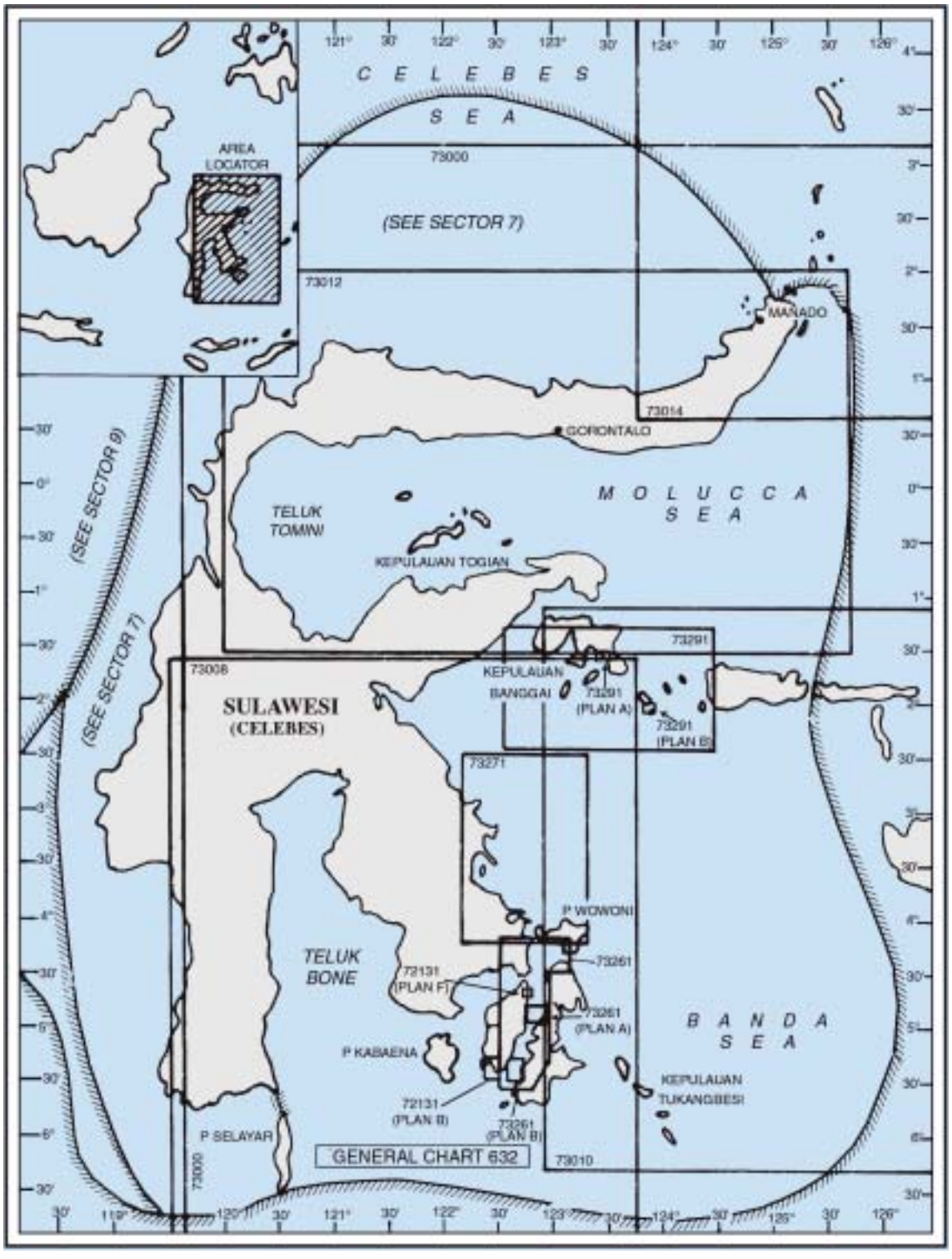
Click on "See Sector" to be hotlinked to that Sector.



Additional chart coverage may be found in CATP2, Catalog of Nautical Charts.

SECTOR **8** — CHART INFORMATION

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SECTOR 8

SULAWESI—SOUTH AND EAST COASTS

Plan.—This sector describes the E coast of Sulawesi from Tanjung Utara, the N extremity of the island SSW to Tanjung Lassa and includes the W islands of Kepulauan Sula, Kepulauan Tukangbesi, and the E coast of Pulau Selayar.

The general description is from N to S and follows the general coastline in the various bays, of which the most prominent are Teluk Tomini, Teluk Tolo, and Teluk Bone.

General Remarks

8.1 The E peninsula of Sulawesi separating Teluk Tomini and Teluk Tolo is the least known of all the peninsulas of Sulawesi. A chain of islands consisting of Kepulauan Banggi and Kepulauan Sula extends about 200 miles E from the peninsula.

The SE coast of the Sulawesi is formed by the SE peninsula of the island which separates Teluk Tolo from Teluk Bone. At its extremity is Pulau Butung and a group of islands known as Kepulauan Tukangbesi. All of these islands are mountainous and little known.

The SW peninsula, roughly parallel to the SE peninsula, separates Teluk Bone and the Makassar Straits. Several islands lie off the S end of this peninsula.

Mountain ranges run through both the SE and SW peninsula and there are a few conspicuous peaks.

Bitung, the port of most importance, stands at the S end of Selat Lembeh. In the bays and coves of the peninsulas there are some which afford shelter during the monsoons.

Winds—Weather.—In the N entrance of the Molucca Sea the monsoons are powerful and constant. They blow chiefly from the N and S. The South Monsoon prevails from June to November and the North Monsoon blowing from N to NE prevails from December through April. The South Monsoon is somewhat more powerful and regular than the other, but a force of more than 6 has not been reported.

Hard gusts of wind are rare in the S part of this entrance. Rain falls all year round with the greatest in June, July, and January and the least in February, March, September, and October.

On the SE coast of Sulawesi the monsoons are powerful and regular. The Southsoutheast Monsoon prevails from May through October, and the Northnorthwest Monsoon from December through March. The Southsoutheast Monsoon is more constant and powerful than the other, but seldom is a wind force greater than 5, and then during the Northnorthwest Monsoon.

The sky is frequently covered and haze is most common in the latter part of the Southsoutheast Monsoon. Rain squalls occur all year round with hard squalls most frequent in December and January. Thunderstorms occur most often during April and November which are the months of the change of the monsoon.

The monsoons on the S coast of Sulawesi blow with much steadiness, especially the E which begins in the end of April, and blow strongly until October, from ESE by day, and under the influence of the land wind, ENE at night.

The West Monsoon commences in December from WNW and is at its height in January with heavy squalls. In February and March unsteady winds will blow between SW and N. The land wind is seldom felt at this season.

Rain is most abundant in December and January, lessening in February and March. At coast stations the rainy period will last until June.

In the East Monsoon, the sky is hazy, particularly in August and September. During the West Monsoon, it is generally overcast and bright periods only occur toward the end of the W winds.

Tides—Currents.—Currents in the Molucca Sea set in a predominantly NE direction during the year at a rate of 1 knot during the Northwest Monsoon, and about 0.75 knot during the Southeast Monsoon. The currents in Teluk Tomini are thought to be weak.

A high swell can develop with N winds, and during the South Monsoon, especially in July and September, high seas frequently occur.

In the Banda Sea, during the Northwest Monsoon, a strong current runs to the NE while during the Southeast Monsoon, this current runs to the SW. Both flow at an average rate of 1 knot, and at rare intervals may be greater than 3 knots. Tidal currents, near the coast and narrow passages, will run 1 to 2 knots.

Tanjung Utara to Tanjung Tombulilatu

8.2 The coast between **Tanjung Utara** (1˚45'N., 124˚59'E.) and Tanjung Pulisan, 12 miles ESE, forming the S side of Selat Bangka, is low and of little importance to navigation. The islands forming the N side of the strait are hilly and heavily wooded.

The coast between Tanjung Pulisan and Tanjung Flesko, 85 miles SSW, is steep-to with the spurs of high land standing fairly close to the sea, forming conspicuous points along the entire coast.

Gunung Kalabat (1˚27'N., 125˚00'E.) is a conspicuous cone standing by itself, rising to a height of 2,022m, 19 miles S of Tanjung Utara. The peak, which rises from a low base, is visible 60 miles in clear weather. Gunung Suasudara, 1,365m high, rises 9 miles ENE of Gunung Kalabat and Gunung Batu Angus, rises to a height of 1,134m, 2 miles N of Gunung Suasudara.

During the South Monsoon, these mountains are generally visible in the early morning, but are frequently hidden by 0800. Gunung Kalabat often remains clear while the mountains E were covered.

From Gunung Kalabat to Gunung Kaweng, a densely-wooded ridge 20 miles SSW, attaining a height of 1,179m, parallels the coast about 5 miles inland.

Numerous spurs approach the coast from this ridge. Southward of the high volcanic group formed by Gunung Sempo, Gunung Soputan, Gunung Kawatak, and Gunung Manimporok, 10 miles WSW of Gunung Kaweng, is a low plain extending to the coast.

From a position 24 miles N of **Tanjung Flesko** (0˚28'N., 124˚30'E.), the mountains are closer to the coast. Some of the more conspicuous peaks are Pegunungan Mata Mata 1,195m high, 24 miles NNE of Tanjung Flesko, and Gunung Ambang, 1,823m high, 18 miles SW of Pegunungan Mata Mata.

During the South Monsoon, mountains above 914m are hidden in clouds from about 0800 hours for the rest of the day.

The 183m curve, from a position close N of Tanjung Utara, encompasses the islands that form the N side of Selat Bangka, then approaches the coast again at Tanjung Pulisan. From Tanjung Pulisan the curve follows the coast and encompasses Pulau Lembeh, and from this island it is from less than 0.5 mile to 5.5 miles offshore with many dangers within the curve. There are no known dangers outside the 183m curve.

8.3 Selat Bangka (1˚45'N., 125˚05'E.) lies between the NE coast of Sulawesi and a group of islands to the N. The principal islands in this group are Pulau Bangka, Pulau Talisei, and Pulau Gangga.

On the S side of the strait, from Tanjung Utara to Tanjung Pulisan, 12 miles distant, the coast recedes and forms a bay. Pulau Tamperong is a low island lying close offshore in the W part of the bay. Likupang is a small village SE of Pulau Tamperong.

There is anchorage in the road N of Likupang with the point N of Pulau Tamperong, bearing 314˚, and the middle of the village, bearing 200˚ in a depth of 10.9 to 14m. This anchorage affords good shelter during the South Monsoon. Smaller vessels can anchor closer in but care should be taken to remain N of the line of a black pyramidal rock, lying close off the point about 3.5 miles W of Tanjung Pulisan and the first point E of Likupang.

Vessels approaching the roadstead should take care to avoid the charted shoals. Only vessels with local knowledge should approach the road, and only then under the most favorable conditions.

Directions.—From W, Tanjung Utara may be passed at a distance of 0.25 mile, and then a course of 097˚ is steered, keeping the S end of Pulau Nain-besar just touching Tanjung Utara astern. When the NE extremity of Pulau Talisei and the W extremity of Pulau Bangka are in range, a SE course may then be steered to pass 0.25 mile from Tanjung Pulisan.

From E, pass at least 0.25 mile N of Tanjung Pulisan and steer for the gap between Pulau Gangga and Pulau Tindila until the NE extremity of Pulau Talisei and the W extremity of Pulau Bangka are in range, then steer 277˚ with the S tangent of Pulau Nain-besar just touching Tanjung Utara. When S of the S extremity of Pulau Gangga, steer to pass 0.25 mile N of Punal Utara.

To pass through the channel between Pulau Bangka and Pulau Konabohutan, the W extremity of Pulau Bangka should be steered for on course 180˚, taking care not to stand into less than 18.3m until the S extremity of Pulau Kinabohutan bears 267˚. A course of 219˚ then leads through the channel in the deepest water. When W of the W extremity of Pulau Bangka, steer as required to the desired destination.

A danger area, best seen on the area chart, includes Selat Bangka and the surrounding islands. See Pub. 160, Sailing Directions (Planning Guide) for Southeast Asia.

The coast between Tanjung Pulisan and **Tanjung Batuangas** (1˚30'N., 125˚15'E.), the N entrance of Selat Lembeh, 12 miles SSE, consists of long steep beaches of coarse, black volcanic sand in the N part. In the S part it is low, rocky, and thickly wooded rising continuously to the summit of Gunung Batu Angus. There is heavy surf with a N or NE swell.

Pulau Mogogimbun, 5 miles SSW of Tanjung Pulisan, is a small, wooded, conical island 50m high, which lies 1 mile offshore. A reef extends from the N side of the island. There are two rocks on the reef which show at HW. The sea breaks heavily on these rocks with the least sea or swell.

Anchorage, sheltered from S winds, is available in the bay W of Pulau Mogogimbun in a depth of 25m, with that island bearing 093˚ and the white topped rock off Tanjung Pulisan, bearing 022˚.

8.4 Tanjung Pulisan (1˚41'N., 125˚10'E.) is a bold point with boulders off it and a narrow fringe of coral. From the cape the land rises abruptly to a high tableland, 277m high, 1 mile long and thickly wooded. It is easily distinguished from all sides by its square, boxlike aspect. A sharp pointed rock, 9.1m high with a white top, lies close off the E side of Tanjung Pulisan.

Pulau Gangga (1˚47'N., 125˚03'E.), about 101m high, lies in Selat Bangka 4 miles ENE of Tanjung Utara.

Pulau Lehaga lies on a reef close W of the S extremity of Pulau Gangga and Pulau Tindila lies close N of Pulau Gangga. Pulau Talisei, which rises to a height of 359m near its center, is the farthest N of this group of islands.

It is separated from Pulau Tindila by a channel about 0.2 mile wide and with depths of 14.6 to 27m. Tanjung Arus, the N point of the island is a bold, steep-to cliff with large broken rocks at its base. A light, from which a radiobeacon and a racon transmit, is shown from a 20m high white framework tower on the point.

The S end of the island is low. Pulau Kinabohutan lies close off the E side of the island, 3 miles NE of its S extremity. Talisei Road lies between the S extremity of Pulau Talisei and Pulau Kinabohutan. There is anchorage available in 18m, between the head of a mole fronting the village and an 8m patch 0.3 mile SE of the mole. The water SW of Pulau Kinabohutan is foul with shoal patches.

8.5 Pulau Bangka (1˚48'N., 125˚09'E.) is 353m high and of irregular contours. Batu Kapal, a rock 4.3m high rises 0.2 mile N of the low, mangrove covered N point of the island. Tanjung Batu Gosoh, the E point of the island, is a sharp, conical hill 81m high, joined to the island by a low neck of land. To the NE, the point ends in a succession of sharp needle rocks which are surrounded by water, and are 4.6 to 6.1m high. Off the point 1.5 miles S there are some above-water rocks.

Jiko Sago (Djiko Sago) is a bight on the SE coast of Pulau Bangka where there is anchorage in 37m, 0.5 mile from shore. The S side of this bight is formed by a narrow tongue of land with an extensive reef projecting to the S, on which there is an

islet and several rocks above water which the sea breaks against.

The S point of Pulau Bangka is a low, cliffy point that rises to a conical hill, 81m high. There are heavy tide rips off the point. The W coast of the island is low and fringed by coral extending about 0.1 mile offshore. The W extremity of the island is a low, dark, red cliff with trees.

8.6 **Pulau Lembeh** (1˚29'N., 125˚14'E.) is a densely-wooded island that forms the E side of Selat Lembeh. The island rises to a height of 477m in its SW part. The E coast of the island is cliffy and steep-to, and the N end, with a well-wooded range of hills, is narrow and precipitous on both sides. The N end of the island consists of large masses of vegetation-covered black and red rocks, and the NE point of the island is a wedge shaped cliff about 61m high. White guano-covered rocks extend about 0.4 mile N of the point. The sea always breaks on these rocks.

Pulau Susulina, about 37m high, lies close off the SE point of Pulau Lembeh. Pulau Dua lies about midway along the S coast and has two peaks, the highest one being 94m. This islet is steep-to on all sides except the S which has a shoal that extends almost 0.25 mile off it. An explosives dumping ground lies 12 miles SE of Pulau Susulina.

The S point of Pulau Lembeh is formed by a narrow, hilly tongue of land. The S coast is bordered by an extensive drying reef which extends almost 0.5 mile SW of the S extremity.

Pulau Sandy (1˚23'N., 125˚10'E.) lies on a reef, 0.7 mile W of the S extremity of Pulau Lembeh. A light shown from a white metal framework tower with red bands stands on the island.

Tanjung Labuan Compenie, 3 miles NE of Pulau Sandy, is the E entrance point of the S end of Selat rocks at its base. A light, from which a radiobeacon and a racon transmit, is shown from a 20m high white framework tower on the stands on the point. The coast of Pulau Lembeh, NE of Tanjung Labuan Compenie, is reef-fringed for a distance of 4 miles, thence relatively steep-to, its N extremity.

Selat Lembeh (1˚28'N., 125˚12'E.) is a narrow, somewhat intricate strait that is bound on the E by Pulau Lembeh and on the W by the mainland. In the middle of the strait there are two islets and an above-water rock encircled by reefs with a channel on either side. The channel W of the islets and rocks is the best because it's straight and the reef shows clear discoloration. The strait has been swept to a controlling depth of 11m; however, a 6.4m patch lies outside the swept channel, 0.5 mile WSW of the S islet in the narrows. The passage through the strait is only recommended for vessels less than 100.5m in length.

Tidal currents in Selat Lembeh are semidiurnal and in the narrowest parts, attain a rate of 3 to 4 knots. The current sets N near the time of HW and S near LW. The current S of the islets, at the entrance to the narrows, is small under Pulau Lembeh and sometimes there is an eddy.

8.7 **Bitung** (1˚26'N., 125˚11'E.) (World Port Index No. 52065), a deep-water port, is situated on the Sulawesi coast N of Tanjung Labuan Compenie. There are two wharves, with depth of 5 to 9m alongside; one is 582m long and the other is 485m long.

Tides—Currents.—The flood tide sets E and the ebb W, both running parallel to the wharf with a rate of 1 to 2 knots. Ships are always berthed against the current.

Depths—Limitations.—Vessel limitations are a length of 231m, draft 9.75m, and 60,000 dwt.

Pilotage.—Pilotage is required and may be arranged via Coastal Radio Station Bitung (call sign PKM). A 24 hour ETA is required. Pilots embark about 0.5 mile W of Tanjung Labuan Compenie.

Anchorage.—The recommended anchorage is 1.25 miles WSW of Tanjung Labuan Companie in a depth of 53m. Ships awaiting berth can also anchor 1 mile ENE of the same point, in a depth of 37m.

Caution.—The water in the vicinity of Bitung is filled with numerous fishing boats with no lights. Approaching or sailing at night should not be attempted.

Tanjung Merah (1˚24'N., 125˚07'E.) is located on the Sulawesi coast, 2.75 miles W of Pulau Sandy. This point, which is the S entrance of Selat Lembeh, has shoals with depths of 1.2m that lie nearly 0.5 mile S of it. Vessels should give the point a wide berth.

Kema (1˚22'N., 125˚05'E.) (World Port Index No. 52070) is a village situated on a plain at the foot of Gunung Kalabat. Numerous palms along the beach indicate the position of Kema, which is not easily seen from seaward. The road off Kema affords good anchorage in depths of 9 to 20m throughout the year. At Kema, the S wind of the Southeast Monsoon is said to frequently hinder shipping.

Landing can always be obtained on the S side of the roadstead, even when this is impracticable elsewhere due to a heavy swell. Under favorable conditions the most convenient landing place is at the village.

The coast between Kema and Pulau Bentenan, 25 miles SSW, is low and monotonous, and is fronted by a drying reef projecting 0.1 to 0.15 mile except immediately S of Kema where it is 0.3 mile broad. The only villages on this part of the coast are Rimbua, 23 miles SSW of Kema, and Bentenan, 2 miles farther SW. There is good anchorage 0.5 mile SE of the village of Bentenan. Lilang Light is shown from a headland about 2.5 miles S of Kema.

8.8 **Pulau Bentenan** (0˚58'N., 124˚54'E.), 135m high and saddle-shaped, lies on a reef extending from the coast 2 miles SSE of Bentenan. Four steep-to rocks lie close off the E side of the island. Pulau Pakolor, 2 miles E of Pulau Bentenan, is 66m high, marked by a light, and sparsely covered with vegetation. A rock with a depth of 0.9m, lies 0.2 mile S of Pulau Pakolor, and in any swell or sea there are heavy rollers over it. In calm weather its position is indicated by ripplings. Pulau Punten lies 1.5 miles SW of Pulau Bentenan. Two small islets or rocks lie between these two islands. A 2.1m patch lies close offshore 1.5 miles W of Pulau Punten.

The coast between Pulau Bentenan and Tanjung Flesko, 39 miles SW, is generally low and forested. It is indented by numerous bays and there are several off-lying islands.

Belang Roadstead lies off the village of **Belang** (0˚56'N., 124˚47'E.), about 7 miles WSW of Pulau Bentenan. The village is large. A few white houses with zinc roofs can be seen at a great distance.

Landing can be effected on the beach fronting the village, or in conditions of swell, 0.25 mile SSW of it. A lighted beacon is shown from Belang.

Anchorage.—Anchorage can be taken from 0.2 to 0.3 mile offshore, in depths of 18 to 37m, SE of Belang, but the holding ground is poor. Numerous fishing nets with floats are often laid in this vicinity.

Tanjung Mangkit (0˚55'N., 124˚47'E.) is the S entrance point to Belang Roadstead. Pulau Tulang and Pulau Hogow are two rocky islets that lie 2 and 3 miles, respectively, SSW of Tanjung Mangkit.

8.9 Teluk Totok (0˚52'N., 124˚43'E.) (World Port Index No. 52080), which is fronted by Pulau Tulang and Pulau Hogow, is protected on the S by a tongue of land that extends 2.75 miles NE from the mainland, in a position 4 miles SW of Pulau Hogow. This bay affords spacious and sheltered anchorage in both monsoons. It can be entered by passing either N or S of Pulau Hogow. The passage N of Pulau Hogow should not be attempted without due caution as two banks, the outer with a depth of 11m, extend nearly 0.75 mile SW from Pulau Tulang.

A saddle-shaped islet lies close to the N shore of the bay, 1.5 miles W of Pulau Hogow, with two above-water rocks on a reef close NW of it.

Totok, a village on the W shore of the bay, with Ratotok, another village close NW of it, are of little importance; although, there are several large warehouses and a loading pier about 30.5m long belonging to the mining company.

Anchorage may be taken E of the pier in depths of 20 to 29m. The water in the anchorage is usually discolored, so that the edge of the coastal reef is not always visible.

Pulau Kumeke (0˚48'N., 124˚40'E.), a rocky, thickly wooded island, lies 0.25 mile offshore 4 miles SW of Totok. A low rock covered with vegetation lies near the center of an extensive reef with a depth of 4.9m, about 0.8 mile E of Pulau Kumeke. Kotabuna, a large village with a flagstaff, is situated on the coast W of Pulau Kumeke. A small pier projects from the coast near the flagstaff. There is a lighted beacon at Kotabuna. Pulau Bambajanon, 1.5 miles S of Pulau Kumeke, is separated from the coast by a clear channel about 1 mile wide.

In the small bight off the village of Telaga, 3 miles SSE of Pulau Bambajanon, there is anchorage in 37 to 42m about 0.25 mile offshore. A rock awash lies on the coastal reef off Telaga.

Tanjung Salimburung (0˚43'N., 124˚38'E.) is located on the S side of the above bight 0.75 mile from Telaga. Jiko Bulutaya (Djiko Buluntaja), 7 miles SSW of Tanjung Salimburung, affords calm anchorage for vessels with local knowledge in 26m off the village of Molobog.

Kepulauan Laga, two small rock islets, lie close off a point of land 3.5 miles SSE of Jiko Bulutaya. On the W side of the islets there is a bay, which is deep and clear of dangers and which a river enters the sea. Nuangan, a village, stands 1 mile up this river. Vessels with local knowledge may anchor 0.25 mile off the mouth of the river in a depth of 26m.

Jiko Matabulu (Djiko Matabulu), 4 miles SW of Kepulauan Laga, and Jiko Houjoh (Djiko Houjoh), a short distance farther S, only afford anchorage close offshore for vessels with local knowledge.

8.10 Tanjung Flesko (0˚28'N., 124˚30'E.) is high, rocky, and there is frequently a strong current and surf near the point. A small, but remarkable peak 633m high, rises 2.5 miles NW of Tanjung Flesko. A drying reef lies 0.45 mile E of the point. A 6.7m patch lies about 2.25 miles SSW of Tanjung Flesko, and a 10.9m patch lies close E of the 6.7m patch.

From Tanjung Flesko the coast trends WSW 14 miles to Tanjung Binarahan. The intervening shore is indented by numerous bays which may provide anchorage.

Pulau Pondang lies 1.25 miles offshore, 3 miles SW of Tanjung Flesko. A reef, with two above-water rocks and a least depth of 3.7m, extends about 0.5 mile SW of the islet. A light, shown from a white metal framework tower 22m high, stands on the SW slope of the islet.

Anchorage.—Anchorage, in 37m, sheltered from all winds, is available in the bight W of Tanjung Flesko. The bight that lies WNW of Pulau Pondang provides sheltered anchorage from all but E winds, 0.45 mile off the head of the bight in 40m.

Kepulauan Batutolu are two islets lying 7 miles W of Pulau Pondang. The N is joined to the coast by a drying reef and the S is surrounded by a drying reef. Tobajangan, a village, stands on the NE shore of a bay immediately E of Tanjung Binarahan.

Tanjung Tolu (0˚22'N., 124˚13'E.), 4 miles W of Tanjung Binarahan, is marked by a round hummock on the end. Tanjung Panango lies 10.5 miles W of Tanjung Tolu. The 200m curve closes to 0.75 mile along this coast and there are several detached reefs, some of them dry, that lie close within this line. Close W of Tanjung Panango are two reefs which dry. A 1.8m patch lies 3 miles W of Tanjung Panango.

Tanjung Salongon, about 5 miles W of Tanjung Panango, is low but can be recognized from the E by the roof of a large storage shed. A river enters the sea immediately E of the point. Anchorage may be taken in a depth of 24m inside a 4.6m patch, 0.5 mile E of the mouth of the river, about 0.2 mile offshore.

Tanjung Tombulilatu (0˚18'N., 123˚20'E.), 39 miles W of Tanjung Salongon, is the N entrance point of Teluk Tomini. It is located at the foot of a mountain range, Pegunungan Sinandaka, and the coast in this vicinity is steep-to with a coastal reef here and there.

Teluk Tomini

8.11 Teluk Tomini lies W of a line joining Tanjung Tombulilatu and Tanjung Pangkalaseang, 60 miles S.

In general, the depths in the gulf are over 1,829m. The gulf is surrounded by high mountain land with low plains in front, except where there is a barrier reef when the mountains generally approach the coast.

On the N shore between Tanjung Tombulilatu and Teluk Limba, 50 miles WNW, the mountains rise abruptly from the sea. The charted 183m curve lies close offshore and there are no dangers outside it. Between a position 5 miles W of Teluk Limba and Tanjung Pelasa, 120 miles W, the charted 183m curve lies farther offshore, and a barrier reef with numerous islets, fronts the shore close within it. Along the W half of this stretch of coast there are several steep-to dangers outside the 183m curve.

The head of Teluk Tomino, between Tanjung Pelasa and Tanjung Sausu, 90 miles S, is fronted by barrier reefs in many places within the 183m curve.

On the S shore, between Tanjung Sausu and Tanjung Batuhitam, 135 miles ENE, the depths are great close along the shore. Generally, the hills within this shore rise steeply from the sea while the interior consists of high land and mountains near the coast. Kepulauan Togian extend NW from Tanjung Batuhitan and cover an extensive area in the S part of the bay.

Winds—Weather.—The monsoons within the bay are weak and variable. The Northwest Monsoon lasts from December to April blowing between NW and N, and the Southeast Monsoon, from May to October blowing from SSE to SSW.

Prolonged strong winds are rare and rain squalls infrequent. Showers occur at any time of the year but there are no regular wet and dry seasons. Land and sea breezes are a regular feature. At times over the N part of Teluk Tomini visibility is reduced by a thick haze.

Tides—Currents.—During the Southeast Monsoon, a current was observed N and NE of Kepulauan Togian, running with some strength in a NE direction along the coast in the vicinity of Tanjung Flesko. At the same time a W current was observed along the N shore of the bay as far W as Teluk Gorontalo. Tidal currents are scarcely noticeable.

There are several conspicuous mountain peaks along this coast but, as with those farther E, during the Southeast Monsoon, the mountains over 914m are obscured by clouds from 0800 hours for the rest of the day. Even though the mountains are close to the coast, it is not always easy to distinguish the summits. On this coast the points of land are defined and the reefs discolored.

Between Tanjung Tombulilatu and **Teluk Limba** (0˚29'N., 122˚31'E.), the mountains rise steeply from the sea with only an occasional coastal reef.

The coast between Teluk Limba and Tanjung Panjung (Tanjung Pandjang), 45 miles W, provides some good landmarks in the mountain peaks. Gunung Tiolo (Tiolo), 17 miles WNW of Teluk Limba, is the highest summit of a long range and has a double peak, 1,015m high. Gunung Dulantangan, 555m, 15 miles WSW of Gunung Tiolo, is the highest summit of a ridge running about 2 miles from the coast.

Gunung Oleonuhe (Olionuhe) (0˚35'N., 121˚50'E.), 11 miles NNE of Tanjung Panjang, is 701m high. This peak stands by itself and is particularly conspicuous. Further W, between Tanjung Panjang and Tanjung Tolosiadje, about 22 miles, the mountains approach the coast. Gunung Ulota, 14 miles WNW of Gunung Oleonuhe, 884m high, and Gunung Beau, 721m high, 6.5 miles SW of Gunung Ulota, are conspicuous.

North of the bight that lies W of Tanjung Tolosaije, there are three conspicuous peaks; Gunung Dingki 333m high, Gunung Boloo 836m high, and Gunung Salumpengu (Salumpengu) 696m high which rise 4 miles N, 11 miles WNW, and 18 miles WNW, respectively, of Tanjung Tolosiadje.

The mountains from **Tanjung Sempinit** (0˚24'N., 121˚04'E.), 23 miles W of Tanjung Tolosaidje, to Tanjung Pelasa, 39 miles WNW, form a long arched chain that reaches a height of 2,443m, but has no conspicuous peaks. In this mountain range, Gunung Santigi 306m high, lies near the coast 9 miles W of Tanjung Sempinit and is visible from all directions. Gunung Bosago (Bosago) 1,347m high, rises 19 miles NW of Gunung Santigi and is easily recognized.

Teluk Tomini—North Coast

8.12 Teluk Gorontalo (0˚30'N., 123˚03'E.) lies at the mouth of three rivers, 21 miles NW of Tanjung Tombulilatu. On both sides of the river are steep mountain ridges with a wide plain between them at the junction of the rivers. The mouth of the river is quite deep and about 0.3 mile inside the depths suddenly decrease.

Gorontalo (0˚30'N., 123˚03'E.) (World Port Index No. 52090), the principal trading place for Teluk Tomini, is situated on the low tongue of land at the junction of Sungai Bolango and Sungai Bone, the principal tributaries of Sungai Gorontalo. Mainly a lighterage port, exporting copra, it is also a ferry port and oil terminal. Gerontalo Light is shown from the roadstead's E entrance point.

Winds—Weather.—In July and August a strong wind from seaward blows during the day causing a heavy sea. During night, with the land breeze, the sea remains calm. In the Northwest Monsoon, heavy squalls from seaward may occur unexpectedly. Other than the squalls, there is a land breeze which is stronger at night.

Depths—Limitations.—Within the river are two quays. One quay is 70m long, with a depth of 10m alongside; vessels up to 2,500 dwt, with a maximum length of 80m, can be accommodated. The second pier is 59m long, with a depth of 7m alongside.

Pertamina Oil Terminal consists of a single, angled, T-head jetty extending 100m SE from the shore with a depth of 8m at the head. Off the N end of the jetty there is a dolphin.

Pilotage.—Pilotage is not required, but pilots are available and board vessels about 0.3 mile SSW of the light.

Anchorage.—Anchorage may be taken outside the bay in about 80m, mud, about 0.1 mile outside the 10m line with the light structure bearing 040˚. An obstruction lies in the middle of the bay about 0.2 mile NW of the light.

8.13 Teluk Pagujaman (0˚29'N., 122˚40'E.) lies 22 miles W of Gorontalo. It has depths of over 549m in its middle. The village of Bilatu is situated at the head of the bay. Teluk Bobaa, entered 5 miles W of Teluk Pagujaman, has a narrow entrance 0.2 mile wide between the reefs extending from either side, but the reefs are clearly marked by discoloration. The village of Bobaa is situated at the head of the bay.

Anchorage may be taken, by vessels with local knowledge, in a depth of 40m, in Teluk Bobaa.

Teluk Limba, close W of Teluk Bobaa, is divided into two parts by Pulau Limba, a densely-wooded, high island. The entrance into the E bay is only 0.2 mile wide between the reefs projecting from the island and from a point of land on the E shore. There is good anchorage in the E bay in a depth of 40m, but it is not sheltered during the South Monsoon.

Teluk Dulupi is entered between a point 3.5 miles W of Pulau Limba, and Pulau Dulupi, a high island with two hills, 0.6 mile farther W. The bay offers little shelter for large vessels.

The coast between **Tilamuta** (0˚30'N., 122˚20'E.), 6 miles W of Teluk Dulupi and Tanjung Panjang, about 34 miles

farther W, provides good landmarks for vessels navigating outside the barrier reefs.

Along this stretch of coast a barrier of islands and reefs lie just within the 183m curve which is from 1.5 to 5.5 miles offshore. Between this barrier and the islands and reefs under the coast is a broad passage with a few isolated reefs which are easily avoided. The depths in this channel vary from 22 to 55m and occasionally a little more. Anchorage can be found everywhere.

Tilamuta lies on the NW shore of Teluk Tilamuta. A coastal reef extends about 0.7 mile S of the SW entrance point of Teluk Tilamuta. There are two islets on the reef, and the islet 0.21 mile SW of the entrance point serves as a good mark when entering the bay. The largest islet on the coastal reef extending S from the SW entrance point of the bay, lies about 0.5 mile S of that point, and when entering the channel that leads W inside the offlying reef, this islet must be passed on its S side. There is shoal water and reefs off the NE entrance of the bay and a reef extends about 0.7 mile NE from Pulau Mohupombodaa, an island that lies 1.25 miles S of the bay's SW entrance point. The E end of Pulau Mohupombodaa is a conspicuous yellow rocky point.

To enter Teluk Tilamuta, bring the islet close SW of the bay's SW entrance point in line with a peak 6.25 miles W of Tilamuta, bearing 275˚. This course will lead between the reef extending NE of Pulau Mohupombodaa, and a 4.8m patch that lies off the NE entrance point of the bay. When the E point of Pulau Mohupombodaa bears 191˚, the harbor may be steered for or a course taken SW into the inner passage.

Pilots for Tilamuta can be obtained at Gorontalo.

A light is shown from a beacon at Tilamuta.

Some of the more prominent islets along the barrier reef are **Pulau Mopingulo** (0˚27'N., 122˚19'E.), Pulau Telefoa, and Pulau Montuli which lie 1.5, 3.25, and 7.5 miles, respectively, WSW of Pulau Mohupombodaa.

Farther W on the barrier reef, Pulau Bitila lies 6.25 miles WSW of Pulau Montuli, and Pulau Lahei lies 10 miles W of Pulau Bitila.

The inner passage between Teluk Tilamuta and Tanjung Bulooliho, about 13 miles W, can be easily navigated. The various reefs within the barrier are all marked by discoloration, and there are numerous landmarks. There are some passages through the barrier reef, through which some villages can be reached directly.

8.14 **Batumoito** (0˚29'N., 122˚18'E.), a village, stands at the head of a small bay, 3 miles W of Teluk Tilamuta and N of the passage between Pulau Mopingulo and Pulau Telefoa. There is a reef about 0.7 mile E of Pulau Telefoa with a depth of 4.8m on its W extremity. There are patches of 1 and 1.2m, 1.75 and 2 miles, respectively, NE of Pulau Telefoa.

Tapadaa, a small village 5.5 miles W of Batumoito, can be reached through an entrance in the barrier reef W of Pulau Montuli, on a course of 358˚, with a group of casuarina trees W of the village used as an approach mark. This course leads between a 7.9m patch just inside the barrier reef on the E, and a 3.4m patch on the W. Both patches, marked by discoloration, cause heavy tide rips.

Anchorage, in a depth of not less than 27m, can be taken off Tapadaa.

Tanjung Bulooliho (0˚28'N., 122˚08'E.) is a conspicuous point with a hill, 64m high, about 4 miles WSW of Tapada.

Bumbulan (Pentadoe), a village about 4.5 miles WNW of Tanjung Bulooliho, has a prominent warehouse with a zinc roof, which is visible from well out to sea. The anchorage off the village may be reached by crossing the barrier reef E of Pulau Bitila. Cross the barrier reef with the beacon on the W side of Bumbulan in line with the 555m high peak, 2.25 miles NW, bearing 322˚. This course leads E of a beacon marking the reef extending SE from Pulau Bitila.

This reef was reported to extend about 61m SE of the beacon. The reefs on both sides show clearly, and the bottom in the channel can be seen, indicating the continuation of the two reefs.

Continue on course passing close SW of a beacon situated 2.5 miles NNW of Pulau Bitila, which marks a shoal with a depth of 5.8m. Farther inside and directly on this course is a shoal with a depth of 4.3m, marked by a beacon. A reef, with a depth of 0.3m, lies 0.3 mile SE of Bumbulan and is marked by a beacon. There are many other dangers E of the alignment of the beacon and the peak. The reefs are barely marked by discoloration due to the muddy water.

Anchorage may be taken in a depth of 16m, 0.75 mile SE of the beacon that stands on the W side of Bumbulan.

Pilots are available in the village.

8.15 **Tanjung Tamboo** (0˚27'N., 121˚58'E.) is a point located 6 miles WSW of Bumbulan. There are two small islets that lie within 0.5 mile S and SW of Tanjung Tamboo. Marisa, a village 2.5 miles W of Tanjung Tamboo at the entrance to a river, is prominent.

Anchorage.—Anchorage may be taken S of the entrance to the river, in a depth of 21m, mud, about 0.4 mile offshore with a prominent galvanized metal warehouse bearing 358˚. The anchorage may be approached by passing about 1 mile W of Pulau Lanhei on a course of 000˚ with Marisa ahead. When the two islets off Tanjung Tamboo are in line, course should be altered for the anchorage.

Tanjung Panjang (0˚24'N., 121˚48'E.) is low and can be distinguished by a clump of casuarinas. A drying reef, which is always visible, lies 1.5 miles SE of Tanjung Panjang. The coast E of the point is low, marshy, and grown up in mangroves.

Between Tanjung Panjang and **Tanjung Tolosiadje** (Tanjung Tolosiaje) (0˚28'N., 121˚26'E.), 22 miles W, a bight encumbered with islets and reefs is formed in the N shore of Teluk Tomini. Along the shore of the bight is a narrow, marshy strip of land with mountains rising abruptly behind. Some of the more prominent mountains have been discussed.

Pulau Puntu, 271m high, lying about 7.5 miles NW of Tanjung Panjang, is conspicuous from the E and W. The remaining islets in the bight are low and covered with vegetation. There are no known dangers outside the 183m curve along this coast.

Papajato (Papayato) (0˚29'N., 121˚28'E.), the most important village on this bight, lies 2 miles ENE of Tanjung Tolosiaje. The roofs of the buildings in the village can be seen from seaward. A pilot can be obtained at Gorontala.

There are two passages through the barrier reef to the anchorage of Papajato. The E passage is close E of a beacon that marks a detached 3m patch, about 0.5 mile NE of **Pulau**

Sadaa (Sadaa) (0˚26'N., 121˚31'E.); steer course 316˚. The other passage, with Gunung Dingki bearing 348˚, leads through the barrier about 1.25 miles W of Pulau Sadu (Sadu), an islet about 0.75 mile W of Pulau Sadaa. Anchorage can be taken in a depth of about 22m, sand, S of the village.

8.16 **Tanjung Tuladengg** (0˚25'N., 121˚09'E.) is located 18 miles W of Tanjung Tolosiadje. The intervening coast has spurs of the mountains closely approaching the coast as far W as Moutong, about 12 miles W of Tanjung Tolosiaje, then to Tanjung Tuladengg, the coast is low. Tanjung Tuladengg is located at the mouth of a river, and the village of Tuladengg is situated upstream.

Anchorage can be taken in about 29m, E of the mouth of the river. The approach to the anchorage presents no difficulty as the reefs near the 183m curve show discoloration. The area within the 183m curve is full of islets and reefs; all of them show discoloration. Pulau Ilosangi and Pulau Iloluta (Iloluta) lie on the edge of the barrier reef, 3 miles S and 3.5 miles SSW, respectively, of Tanjung Tolosiaje. Pulau Dulangka lies close within the barrier reef, 6 miles SW of Pulau Iloluta and Pulau Lalaijo (Lalaijo) lies close within the 183m curve, 2 miles SSW of Moutong.

Off-lying Islets and Dangers

8.17 There are several known dangers lying outside the 183m curve. These dangers lie on plateaus and are separated by deep water. **Pulau Panabean** (0˚17'N., 121˚15'E.), the farthest S of these islets is marked by a light and lies on the NE end of a large reef, 10 miles SSE of Tanjung Tuladengg. The reef extends 2 miles SSW from the islet, then bends W for 4 miles. Some parts of the reef dry, and on the other parts there are depths of less than a meter. Pulau Maluangi, 1.5 miles N of Pulau Panabean, is surrounded by a reef that is steep-to except on the SW side. A large reef extends N from a position 2.5 miles W of Pulau Maluangi.

A high, bare sand flat lies 1 mile SE of Pulau Dulangka.

8.18 **Moutong** (0˚27'N., 121˚14'E.) is the only village of importance along this stretch of coast. The village can be recognized by the numerous houses and by a small mosque. A light is shown at the mouth of a small river.

The entrance to the anchorage off Moutong leads E of Pualau Maluangi and W of Pulau Lalaiyo. A reef, with a least depth of 1.2m, lies 0.5 mile N of Pulau Lalaiyo. The reefs to the W show poor discoloration.

Anchorage can be taken in 20 to 29m, S of Moutong, keeping clear of the numerous reefs.

There is a jetty at Moutong for discharging oil products with a depth alongside of 6.4m. Vessels up to 700 dwt and 60m long can berth. A light is shown near the base of the jetty.

Tanjung Santigi (0˚23'N., 120˚54'E.) lies about 15 miles W of Tanjung Tuladengg. From Tanjung Tuladengg to Tanjung Sempinit, 5 miles W, the coast is low with sand beaches, then it is grown over with mangroves to Tanjung Santigi.

Mogogondo is a village at the head of a bight, 6 miles WNW of Tanjung Sempinit. A steep rocky hill, 31m high with a rosy color, is located on the coast SW of Mogogondo, and two 131m peaks are located behind Mogogondo. Neither the hill or the two peaks are charted.

Pulau Sama (Sama) is an islet lying on a reef 5 miles SSE of Tanjung Santigi. The approach to the anchorage off Mogogondo through the barrier reef can be made with the rose-colored peak SW of Mogogondo in line with the of the two 131m peaks bearing 039˚. This passage is NW of Pulau Sama, leading between two reefs which dry and are plainly marked by discoloration when covered.

Anchorage can be taken in a depth of 20m, S of Mogogondo.

The inner passage between Tanjung Tuladengg and Mogogondo is not recommended since unknown dangers may exist.

Numerous dangers lie off the coast between Tanjung Santigi and Tanjung Pelasa, 29 miles W. The charted 183m curve does not sharply define the outer limits of the reefs as is generally the case throughout Teluk Tomini.

Vessels without local knowledge are advised to keep outside the charted 183m curve. At night keep S of the parallel 0˚10'N.

Coral islets and reefs lie along and inside the edge of the 183m curve and are plainly marked by discoloration.

The islets are all low coral islets with trees and are visible at distances up to 13 miles.

Pulua Olua (0˚22'N., 120˚49'E.), the largest of these islets, lies about 5.5 miles WSW of Tanjung Santigi.

Pulau Saluton (Saluton) lies 10 miles WSW of Pulau Olua, and Pulau Giombang (Giombang) lies 4.5 miles NNW of Pulau Saluton. These three islets make good landmarks.

Off-lying Dangers

8.19 There are several known dangers outside the 183m curve, and the danger farthest E is a reef which dries, lying about 2.5 miles SSE of Pulau Olua. A small drying reef lies about 5 miles ESE of Pulau Saluton and a 1.8m patch lies 1.75 miles S of this drying reef. Reefs lie about 1.25 miles ESE and 3.5 miles E of Pulau Saluton. A large reef, with several drying patches, lies about 4 miles W of Pulau Giombang, and between this reef and Pulau Saluton there are three other reefs. A 4m patch lies about 0.75 mile SW of Pulau Giombang.

Raaf Reef (Passi Raaf), with a depth of 0.2m, is steep-to and marked by discoloration. It lies 5.5 miles S of Tanjung Pelasa.

Tomini (0˚30'N., 120˚33'E.) consists of a number of small villages situated on a plain about 4 miles wide. The houses of the village, except for a few near the beach, are obscured by coconut trees. A small landing pier is situated at the village and a conspicuous warehouse is situated about 10.4 mile E. A drying reef, not marked by discoloration, and a 2.4m patch, lie 0.4 mile SE and 0.27 mile S, respectively, of the pier. A lighted beacon stands near the head of the pier. Anchorage can be taken in 49m W of the above dangers with the pier bearing NNE.

Teluk Tomini—Head

8.20 From Tanjung Pelasa the coast at the head of the bay trends in a general S direction about 90 miles to **Tanjung Sausu** (0˚59'S., 120˚30'E.), a low point that is recognizable by the tall trees that stand on it.

Kabu Kabu (Siteo) (0˚15'N., 120˚11'E.) is a small village situated 19 miles SW of Tanjung Pelasa. There are few

conspicuous landmarks along this coast. A dark clump of trees at Tinombo, 9.5 miles SW of Tanjung Pelasa is easily recognized. It appears as an islet when seen at a distance. A dark hill, 54m high, close to the coast, rises from a position 4 miles NNE of Kabu Kabu.

The 183m curve lies 1 mile off the shore at Tinombo, and there are no known dangers outside this line.

There is a pier at the village of Tinombo, an administrative headquarters, and nearby is a conspicuous warehouse. Anchorage may be taken in a depth of 73m, 0.5 mile S of the pier. The inshore reefs in the vicinity of the anchorage are reported to show well.

The coast between Kabu Kabu and Kasimbar, a village 25 miles SSW, has no prominent landmarks inland. The coast S of Kabu Kabu to Tanjung Lemo, a low flat point 7.5 miles SSW, is generally high. A conspicuous warehouse is situated about 2 miles SW of Tanjung Lemo.

Tanjung Sene (0˚02'S., 120˚05'E.), 10 miles S of Tanjung Lemo, when seen from N or S, is a prominent point covered with trees of moderate height. A light is shown from Marisa, close S of Kabu Kabu.

A barrier reef lies close inside the 183m curve along this part of the coast, but there are no charted dangers outside.

The charted dangers of the barrier reef may be seen on the chart.

8.21 **Kasimbar** (0˚09'S., 120˚02'E.) is a small village on the coast 7.5 miles SSW of Tanjung Sene.

Anchorage.—Anchorage may be taken, by vessels with local knowledge, in a depth of 44m, E of the village. A large drying reef lies S of the anchorage, 0.3 mile offshore, and a 3m patch lies 1.5 miles E of the village. The approach to the anchorage should be made from S by steering for the point 2 miles N of Kasimbar, bearing 342˚.

The W shore of Teluk Tomini, from Kasimbar to Loji (Lodji), 41 miles SSE, is of little importance and the few anchorages are only visited by small vessels operating in the gulf.

There is no barrier reef along the 183m curve off this stretch of coast, but numerous detached reefs lie within this depth.

Tanjung Turibulu, about 9 miles S of Kasimbar, is sharply defined against the high mountains inland.

Vessels anchor about 0.15 mile from shore, steering for the mouth of a small river, S of the point, on a bearing of 235˚. There is better anchorage in the small bight N of the point.

Ampibabo (0˚28'S., 120˚04'E.), a village about 10 miles S of Tanjung Turibulu, is situated on the S side of a point which has Pulau Dongkala (Dongkala), a wooded islet, lying off it. The islet forms a good mark and are visible from a distance of 10 miles.

Within the 183m curve, which lies 2 miles off, are a number of reefs which dry.

Labua Sore, 12 miles S of Ampibabo, is a basin formed in a coastal reef affording a safe and sheltered anchorage for small vessels. The entrance is about 91m wide, with a depth of 5.5m between the edges of the drying reef and increasing to 18.3m inside.

A conspicuous, bare, yellowish colored hill, 270m high, is located close W of the basin.

8.22 **Pelabuhan Parigi** (Parigi Road) (0˚49'S., 120˚11'E.) is the roadstead that lies off the village of Loji (Lodji). The ruins of an old fort stand here. Parigi, a small village, stands on the shore 4 miles SW of the light structure, and is visible from seaward.

T-head pier, with a depth of 1.5m alongside, is situated here and a conspicuous warehouse stands close N of the pier.

There is a jetty for the discharge of oil products with an alongside depth of 7.2m. Vessels up to 700 dwt and 60m long can berth.

The bottom in Pelabuan Parigi is quite steep, leaving little anchoring space in the road. Vessels with little knowledge of the area should approach from outside the 183m curve.

The coast between Loji and Tanjung Sausu, 24 miles SE, provides no landmarks with the exception of Gunung Pondindilisa (Pondindilisa), which rises to a height of 401m, 5 miles W of Tanjung Sausu. This peak is conspicuous from the NW.

Tanjung Makatata and Tanjung Pondindilisa are located 3 miles SSE and 15 miles SE, respectively, of Loji. These two points are low, but they can be recognized by tall trees.

The 183m curve extends from 3 to 5 miles offshore from Tanjung Makatata and Tanjung Pondindilisa. Along and inside this line are reefs and shoals which discolor.

There are few wide openings in the barrier reef.

A small drying reef lies 4.5 miles N of Tanjung Sausu. A 0.5m patch lies 0.5 mile WNW of the drying reef.

Teluk Tomini—South Coast

8.23 The coast between Tanjung Pangkalaseang and **Tanjung Anau** (0˚34'S., 123˚03'E.), a low point 25 miles WNW, is generally high and steep with several isolated mountains inland.

Gunung Tompotiga, a massive mountain plateau, 1,590m high, rises 8 miles SSE of Tanjung Anau.

The 183m curve lies from 1 to 4.5 miles offshore along this stretch of coast. There are no known dangers outside this line.

Tanjung Lonsio (0˚39'S., 123˚25'E.), 4 miles NNW of Tanjung Pangkalaseang, rises perpendicularly from the sea. A reef lies 1 mile offshore midway between these two points.

Pulau Ampat, a group of four low coral islets, lies near the coast, 3.5 miles NW of Tanjung Lonsio. Three of the islets are covered with vegetation and may be seen from some distance.

Boalemo, a small village, stands on the W side of a bight, 16 miles WNW of Tanjung Lonsio.

Anchorage may be taken off this village in a depth of 16 to 18m, with a prominent hillock about 1 mile S of the head of the bight, bearing 180˚.

Pulau Mantawatudaa (0˚31'S., 123˚06'E.), 4 miles NE of Tanjung Anau, is a low islet covered with vegetation that lies close inside the 183m curve. A smaller islet lies midway between this islet and the mainland.

Pulau Sendiri (0˚29'S., 122˚56'E.), a vegetation covered islet, lies about 8.75 miles NW of Tanjung Anau.

From Tanjung Anua to Tanjung Batu Hitam (Tanjung Batuhitam), 21 miles WSW, the coast continues high and steep. The E extremity of a small peninsula lies 6.5 miles WSW of Tanjung Anau, and on its NW extremity there is a prominent dark-colored hill, 90m high. A sharp peak, 549m high, rises 4 miles S.

The 183m curve lies 16 miles offshore N of Tanjung Batu Hitam. There are several charted reefs on and within the 183m curve. A 9m shoal lies 1 mile outside this line about 13.5 miles NNE of Tanjung Batu Hitam.

Vessels bound for Teluk Poh from the E may cross the 183m curve about 5.5 miles W of Pulau Sendiri, on a course of 220˚, and cross the 183m curve again about 2.5 miles W of Tanjung Batuhitam. Only vessels with local knowledge should attempt this passage.

Kepulauan Togian

8.24 Kepulauan Togian are a group of islands that front the S coast of Teluk Tomini. They lie with their W extremity 67 miles W of Tanjung Batuhitam, extending 43 miles ENE and then SE to Tanjung Batu Hitam.

The principal islands from E to W are Pulau Puah, Pulau Waleabahi, Pulau Waleakodi, Pulau Talatakan, Pulau Togian, Pulau Batudaka, and Pulau Unauna.

Pulau Puah (0˚30'S., 122˚34'E.) lies 12 miles NNW of Tanjung Batu Hitam. It is a hilly island with the highest part at the SW extremity. The water between Pulau Puah and Tanjung Batu Hitam is encumbered with numerous reefs and small islets.

Anchorage may be taken off the SE coast of Pulau Puah, in a basin in the coastal reef, in a depth of 29m.

Selat Walea (0˚25'S., 122˚25'E.), a deep strait, is the usual route from Gonontalo, on the N, to the S shore of Teluk Tomini, S of Kepulauan Togian. The strait is about 1.5 miles wide and passes between a 5.8m patch on the N side, and a plateau that extends 7 miles NW from Pulau Puah, on the S side. A light is shown from a black metal beacon standing on a drying reef on the S side of the strait. Tide rips are frequently seen in Selat Walea.

Pulau Waleabahi (0˚15'S., 122˚18'E.) is a long, hilly island that lies on the N side of the Selat Walea. Its coasts are steep and there are five peaks on the island which are useful for fixing a vessel's position. The highest summit, 448m high, rises 1.75 miles S of Tanjung Komali.

Tanjung Kramat, about 2.75 miles ESE of Tanjung Komali, is a rocky peninsula with two hillocks. A bay that affords anchorage lies on the W side of this peninsula. A ridge, with a depth of 5.8m over the outer end and less water inside, extends 0.5 mile E from the W entrance of this bay, and a rocky islet lies on the ridge 0.2 mile from its outer extremity. A 3.4m patch, marked by discoloration, lies in the entrance of the bay about 0.5 mile NW of Tanjung Kramat.

Anchorage may be taken, by vessels with local knowledge, just within the entrance to the bay in a depth of 46m, mud and sand.

Pulau Waleakodi (0˚15'S., 122˚11'E.) lies on the W side of a deep strait that separates it from Pulau Waleabahi. This island, which is hilly, rises to a height of 397m on its SW side.

The strait between Pulau Waleakodi and Pulau Waleabahi is deep throughout and there are many landmarks for fixing a vessel's position. This passage should only be used by vessels with local knowledge.

Pulau Taoleh and Pulau Malingi lie 1.5 and 3 miles W; respectively, of Pulau Waleakodi. A wide coastal reef surrounds the island. The N coast of Pulau Malingi is steep and rocky with some small beaches. Pulau Langkara (Langkara), a hilly island 142m high, lies 0.75 miles SW of Pulau Malingi.

8.25 **Pulau Talatakan** (0˚21'S., 122˚06'E.) is a hilly island separated from the SE extremity of Pulau Malingi by a channel 0.75 miles wide. The rocky points along the E coast of the island are easily recognized by the islets lying off them. Three islets lie on a drying reef close N of Tanjung Uting, the SE extremity of the island, and another islet which is a useful mark lies 1 mile farther NE. Pulau Towoh, a small islet, lies off E central part of the island.

The passage E of Pulau Talatakan can be used with safety. From S, the 183m curve is crossed through an opening in the barrier reef about 3.5 miles ESE of Tanjung Uting with Pulau Towoh just open SW of the E extremity of Pulau Malingi, bearing 330˚. This leads between two drying reefs near the 183m curve. When the NW extremity of the islet 1 mile NNE of Tanjung Uting is in line with the SE extremity of the three islets 0.3 mile NE of Tanjung Uting bearing 209˚, steer 000˚ for 3.25 miles. Pass 0.6 mile W of a small drying reef, lying 3 miles SE of Pulau Towoh and 0.25 mile E of a similar reef lying 2 miles SSE of the same islet. These reefs are usually marked by discoloration. A 4.9m patch lies 1.5 miles E of Pulau Towoh. As soon as the SW extremity of Pulau Taoleh is in line with the NE extremity of Pulau Malingi, bearing 316˚, steer this course and then proceed N, passing on either side of Pulau Taoleh.

Pulau Togian (0˚23'S., 121˚57'E.), the middle of three islands, rises to a height of 542m. The N coast of the island is high, precipitous, and rocky. Numerous islets and dangers lie off the coast. Teluk Kilat (Kilat Bay), in the W part of the N coast, affords spacious anchorage for vessels with local knowledge, in depths of 40 to 49m. Reefs project from each entrance point, reducing the width.

Teluk Togian (Togian Bay), on the S side of Pulau Togian, is a narrow inlet that can be entered by vessels with local knowledge. The drying areas on each side of the channel are marked by discoloration. Anchorage can be taken in 16m off the village that lies at the head of the bay.

Pulau Mogo besar (Mogo Besar) lies on a reef extending 1 mile SE of the W entrance to Teluk Togian. A 1.5m patch, barely marked by discoloration, lies about 0.5 mile S of the E extremity of Pulau Mogo besar.

To enter Teluk Togian, steer for the SW extremity of Pulau Mogo besar on the heading of 019˚, then round the S side of that islet. Alter course to pass along the NE side of Pulau Mogo besar between the reefs on either side.

When abreast the N point of Pulau Mogo besar, vessels may steer NW on the conspicuous high point on the E side of the bay, then mid-channel to the anchorage.

8.26 **Pulau Batudaka** (0˚30'S., 121˚47'E.) lies close W of Pulau Tagian and is separated from that island by a narrow channel. The island is hilly but has no conspicuous landmarks. On the N and W coasts, the barrier reefs run from 1.5 to 3 miles from the coast, with several drying places of sand and coral. The S side of the island rises steeply out of the sea and forms a large bight. The 183m curve runs about 0.5 mile offshore.

Batudaka, a village on the N extremity of the island, is a collecting point for the many coconut plantations on the island.

The passage to the anchorage off Batudaka lies between Pulau Pohon Ndongo (Pohon Ndongo), a hilly island 2 miles WNW of Batudaka and Pulau Kadidi (Kadidi), a steep rocky island close off the NW coast of Pulau Togian. A conspicuous group of rocks is located on the NW side of a drying reef 1.5 miles NW of Pulau Pohon Ndongo. Two hilly islets lie 0.5 mile NW of Palau Kadidi and another islet, conspicuous when seen from the NW, lies about 1.25 miles NE of the two hilly islets. A 1.8m patch lies 2 miles ENE of Pulau Pohon Ndongo. The patch is marked by a beacon, and a beacon marks the N extremity of a reef extending N from Batudaka.

To approach the anchorage off Batudaka, cross the 183m curve 2.5 miles N of Pulau Pohon Ndongo with the N beacon bearing 135°. This course is held until the palms on the SW point of Pulau Kadidi are abeam, then alter course to 123°, passing N of a 7m patch lying about 0.5 mile NW of the N beacon. When the N beacon is in line with the SE side of Pulau Pohon Ndongo, bearing 226°, vessels can then head for the anchorage off the village.

Vessels can anchor in 20m when the S beacon is in line with the conspicuous group of rocks NW of Pulau Pohon Ndongo, bearing 287°.

Off-lying Island and Dangers

8.27 Pulau Taupan, 2 miles SW of Pulau Batudaka, is a densely wooded island 83m high, surrounded by a drying coral reef.

The only known dangers lying outside the 183m curve N and W of the main group are two atolls. Pasir Tengah (Karang Tengah), an atoll whose edges dry, lies 4 miles off the NW coast of Pulau Batudaka. An atoll, whose edges also dry, lies 1.5 miles E of Karang Tengah.

Pulau Unauna (0°10'S., 121°38'E.), which lies 17 miles NW of Pulau Togian, is steep-to and covered with vegetation. In July 1983, the volcano on Pulau Unauna erupted.

The charted 183m curve lies close off the island. The only dangers are a reef, with a depth of 2.4m, lying 1 mile SSE of Unauna, a village on the NE coast, and some reefs in the roadstead off the village.

A reef, which dries, extends SE from the N end of Unauna, and two detached reefs, with depths of less than 1m, lie within 0.2 mile of the shore off the S end of the village.

Unauna is the administrative headquarters for the whole of Kepulauan Togian. There is a small pier near the flagstaff at the N end of the village.

An area within 3 miles of the coast surrounding Pulau Unauna has been declared a closed and prohibited area. A light is shown from the NE extremity of the island.

The S coast of Teluk Tomini, W of **Tanjung Batu Hitam,** (0°40'S., 122°43'E.) is a low spur extending from a hill 214m high, standing a short distance within the point.

Teluk Poh, entered S of Tanjung Batu Hitam, is surrounded on all sides by high mountains. The N side of the bay is steep-to, but on the S side the 183m curve lies up to 2 miles offshore. Several reefs, with a least depth of 0.9m, lie on the 183m curve N of the village of Dindinga.

The NW of these reefs is marked by a beacon. This village lies S of Tanjung Batu Hitam.

8.28 **Pagimana** (0°47'S., 122°39'E.) (World Port Index No. 52180), about 6.5 miles W of Dindinga, is a village on the S side of an inaccessible lagoon. It is an important trading center. A fishing village, built on piles, is situated on the N entrance to a basin in the coastal reef off the village.

Vessels remaining a short time, anchor within the reefs in a depth of 46m or in a depth of 55m, 0.6 mile NE of the stone pier at Pagimana. Sheltered but confined anchorage may be taken in the basin in the coral reef.

A light is shown near the base of a small pier.

The coast W of Pagimana to Tanjung Api, about 60 miles distant, is hilly with mountains rising a short distance inland.

Gunung Abasong (0°48'S., 122°25'E.) rises to a height of 780m, 14 miles W of Pagimana. This peak is the only important landmark on this coast.

The only known dangers outside the 183m curve along this part of the coast are **Karang Kabini** (0°48'S., 122°06'E.), a small reef which dries, lying midway between Pagimana and Tanjung Api, and 3.5 miles WNW of Bunta is a village and **Pulau Bukabuka** (0°45'S., 121°45'E.), a heavily wooded island that rises to a height of 135m, 7 miles NE of Tanjung Api. The island is marked by a light.

Bunta (0°50'S., 122°09'E.), an important place for the trading of copra and forest products, is situated on the N side of a small bay, 30 miles W of Pagimana. Pulau Paniki (Paniki), lying on a drying reef, is a good mark in the approach to the anchorage. There is a lighted beacon on the NE side of the bay.

Anchorage may be taken, in a depth of 55m, 0.1 mile off the pier at Bunta.

There are three villages that lie on the shore of the bight between Bunta and Tanjung Api, 30 miles W. Tobelombang, Balingara, and Sabo lie 12 miles SW, 20 miles, and 23 miles WSW; respectively, of Bunta. They are occasionally visited by small vessels, but the anchorages are so near the shore that hawsers to the shore are necessary. There is a small pier at Tobelombang.

8.29 **Tanjung Api** (0°48'S., 121°39'E.), marked by a light, is the first distinctive feature of land W of Teluk Poh. The land within the point rises to a flat summit 555m high, with a wide low strip of land between the summit and the mountains inland.

Labuan Blanda (0°51'S., 121°34'E.), on the W side of the low land S of Tanjung Api, affords anchorage to vessels with local knowledge close to the shore E of Ampana, a village, in a depth of 55m. There is a lighted beacon at Ampana.

There is an oil jetty at Ampana with a depth alongside of 7m. It can handle vessels up to 1,200 dwt and 70m long.

The S shore of Teluk Tomini between Tanjung Api and Tanjung Sausu, 70 miles W, forms a wide bay generally known as Teluk Poso. The shores of the bay are mostly steep with several prominent summits.

On the E side of the bay a dome shaped hill, 237m high, rises near the village of Bongka, 20 miles SW of Tanjung Api. A prominent mountain, Kandela, is a steep, rocky wall in the mountains immediately behind the narrow strip of land on which the villages stand, about 19 miles SW of Bongka.

Gunung Untu Jowi (1˚22'S., 121˚11'E.) rises to a sharp peak, 1,002m high, 2.5 miles inland, about 7 miles SW of Kandela. Along the S shore of the bay the high mountains inland appear as a single continuous mountain ridge with a flat upper surface. Gunung Tongku (Tongku), 654m high, 22 miles WSW of Untu Jowi, is the farthest E of three peaks, and Gunung Lebanu (Lebanu), 450m high, 5 miles SW of Gunung Tongku, is in the form of a beehive. These peaks are conspicuous at a distance of 40 miles.

A small isolated reef with a least depth of 0.9m, lies 1 mile offshore about 36 miles SW of Tanjung Api.

Karang Lalanga (1˚02'S., 120˚41'E.) is a large drying reef, always marked by discoloration, lying 10 miles ESE of Tanjung Sausu. It is steep-to except on its E side where there are three small drying reefs and a 2.4m patch. Another small reef lies 1 mile S of Karang Lalanga.

Haarlemmermeer (Karang Laut) (0˚46'S., 120˚55'E.), 28 miles NE of Tanjung Sausu, is a coral reef which partly dries, marked by surf and discoloration when covered. A shoal, with a least depth of 4.9m, lies 3 miles NNW of Karang Laut.

8.30 Todjo (Tojo), a village 34 miles SW of Labuan Blanda, lies on the S bank of a river. An administrative building stands in the middle of Todjo, and close to it is a mosque. Anchorage may be taken off the village of Todjo in a depth of 27m. Kandela is a good landmark in approaching the anchorage.

Banano, a small village, lies at the head of a bight 5 miles SSW of Todjo.

Anchorage may be taken about 0.25 mile NW of the village in depths of 26 to 31m. A detached reef, which dries, lies about 0.4 mile NNW of Banano.

Tanjung Lemo (1˚24'S., 121˚02'E.), lying 7.5 miles SW of Banano, is a low point fringed by a reef which extends 0.5 mile N. On the N edge of the reef there is a rock which dries. A reef filled bight lies E of Tanjung Lemo, and a barrier reef fronts the point along the 183m curve.

Tanjung Karawasa, a rocky point, lies 12 miles WNW of Tanjung Lemo and Tanjung Tabawo, 2.75 miles farther W. Tanjung Putia, 2.5 miles SW of Tanjung Tabawo, is the NE entrance point of a small bay where the village of Poso lies. Tanjung Pemandingi, the W entrance point of the bay, lies 1.75 miles SW of Tanjung Putia.

8.31 **Poso** (1˚22'S., 120˚45'E.) (World Port Index No. 52140), the seat of a civil administrator, is situated on the E bank of the Sungai Poso. The road off Poso is entirely exposed to N winds. There is an oil jetty at Poso with an alongside depth of 5.6m. It can handle vessels 70 to 130m long and 1,200 to 6,500 dwt. A light is shown near the foot of the jetty.

The depths from shore rapidly increase and vessels should anchor in a depth of 69m, 0.25 mile N of the entrance of the river. Current sometimes sets out strongly from the river.

Mapane, a village about 5 miles SW of Poso, is conspicuous from seaward. The anchorage is in 60m, 0.22 mile NE of a prominent tree near the village. The depths decrease rapidly toward shore.

Teluk Tambarana, on the W coast of Teluk Poso, is seldom visited. The bay is fronted by a barrier reef and one of the reefs, lying 2.5 miles SE of **Tanjung Tambarana** (1˚11'S., 120˚35'E.), with a depth of 0.3m, is marked by a beacon. There is an oil jetty at Poso with an alongside depth of 5.6m. It can handle vessels 70 to 130m long and 1,200 to 6,500 dwt. A light is shown near the foot of the jetty.

The depths from shore rapidly increase and vessels should anchor in a depth of 69m, 0.25 mile N of the entrance of the river. Current sometimes sets out strongly from the river.

Teluk Tambu, 9 miles NNW of Tanjung Tambarana, is easily recognized by a white sandy beach on its N side.

Anchorage is available in a depth of 31m in the entrance of the bay.

Tanjung Sausu lies 3.25 miles NNW of the N entrance point to Teluk Tambu.

Pilotage.—Pilotage is not compulsory, however vessels should send their ETA through Jakarta radio 10 days, 3 days, 48 hours and 24 hours prior to arrival stating arrival draft and last port of call.

Kepulauan Sula and Kepulauan Banggai

8.32 These island groups lie off the E coast of Sulawesi, S and SE of Tanjung Pangkalaseang. The island groups are described from E to W and from N to S.

The islands are bound on the N by the Molucca Sea and on the S by the Banda Sea. The W islands of Kepulauan Bangaai are separated from Sulawesi by Selat Peleng.

Kepulauan Sula comprises three large islands of Pulau Mangoli (Mangole), Pulau Sanana (Sanana), and Pulau Taliaboe (Taliabu), with a number of smaller islands. These islands are high, bold, fertile, and thickly wooded. The NW extremity of Pulau Taliaboe lies about 70 miles SE of Tanjung Pangkalaseang on Sulawesi.

Pulau Taliaboe and Selat Capalulu are described in this volume. For the islands that lie E of Selat Capalulu, see Pub. 164, Sailing Directions (Enroute) New Guinea.

Kepulauan Banggai (Banggai Archipelago), separated from Kepulauan Sula by Selat Salue Timpaus (Greyhound Strait), includes Pulau Peleng and the island to its SE and S.

Pulau Peleng is separated from Sulawesi on its W and N sides by Selat Peleng. Pulau Peleng is a mountainous and thickly wooded island with an irregular outline forming many bays.

When coming from the N, a conical peak 558m high in the E part of the island, is conspicuous. Pulau Sago (Sago), the southernmost island of the group, is an excellent mark for approaching Kepulauan Banggai from the SW and from the SE, the islands at the S entrance of Selat Salue Timpaus provide more than enough landmarks for the approach.

Pulau Taliaboe (1˚50'S., 124˚50'E.), is separated from Pulau Mangoli on the E, by Selat Capalulu (Tjapaloeloe Strait).

The N coast of Pulau Taliaboe extends from **Tanjung Fatoekoemboe** (Tanjung Fatukumbu) (1˚47'S., 125˚19'E.) to Tanjung Marikasoe (Tanjung Marikasu), 56 miles W. This coast has numerous spurs running down to the sea from the mountain and hills making the coast tolerably high.

Except near the E end of the N coast, the 183m curve lies between 4 miles and 7 miles offshore. The depths within this line are irregular, with a number of shoal heads and some islands. Unless necessary, vessels passing this coast should keep outside the 200m curve.

8.33 Pelabuhan Tubang (1˚45'S., 125˚06'E.) provides an anchorage that also serves as the loading berth for small vessels. The bay is entered during daylight hours and local knowledge is essential.

From Tanjung Fatoekoemboe to Tanjung Pohonbatoe (Tanjung Pohonbatu), 13 miles WNW, the coast is indented by three bays where anchorage can be taken in the South Monsoon. The two E bays, 2 miles and 7 miles WNW of Tanjung Fatoekoemboe, provide anchorage in the North Monsoon.

The coast from Tanjung Pohonbatoe to Tanjung Laoe (Tanjung Lau), 15 miles W, is also indented with several bays. At Tanjung Marikasoe, 29 miles farther W, the coast is made up of dunes covered with some vegetation and bordered by a sandy beach. Anchorage can be taken almost anywhere along this part of the coast during the Southeast Monsoon.

The S coast of Pulau Taliaboe extends from **Tanjung Ndoloedeoe** (Tanjung Ndoludeu) (1˚54'S., 125˚19'E.), the SE extremity of the island, to Tanjung Merah, 56 miles distant, the SW extremity. Tanjung Ndoloedeoe is low and sandy with hills rising close within.

In the bights on either side of Tanjung Kasika, a rocky point 13 miles W of Tanjung Ndoloedeoe, the shores are sandy beaches. A conspicuous hill, 353m high, is located 1 mile N of Tanjung Kasika and a conspicuous hill, 242m high, is located 1 mile inland, 5.5 miles ENE of Tanjung Kasika.

8.34 Tanjung Kona (1˚56'S., 125˚01'E.), 6 miles SW of Tanjung Kasika, is the W entrance of the bight that lies between the two points. Mantarara, a small village, lies at the head of the bight.

The coast W of Tanjung Kona to Tanjung Pastoeri (Tanjung Pasturi), 7 miles distant, is low and sandy with the hills approaching nearer the coast. A hill, 429m high, rises 1 mile N of Tanjung Pastoeri.

In the bight between Tanjung Pastoeri and Tanjung Wojo, 12 miles WSW, there is a sandy beach interrupted in places by rivulets during the rainy season. Pulau Wojo, a small islet about 20m high, lies close to the coast 1 mile E of Tanjung Wojo. The islet is conspicuous from the E and W. A 4.9m patch and a 4.3m patch lie 0.75 mile ENE and 0.5 mile NE, respectively, of Pulau Wojo.

Anchorage may be taken, by vessels with local knowledge, in a bight immediately NE of Pulau Wojo in a depth of 29m. Care must be taken to avoid the patches described above.

Kawaloe (Kawalu), a large village 9 miles WSW of Pulau Wojo, is a local administrative headquarters. A hill 1.5 miles W of Kawaloe can be easily recognized as there are some reddish patches of rock.

Tanjung Bo, 4 miles W of Kawalu, is a rocky point of reddish-brown color.

Tanjung Merah, the SW extremity of Pulau Taliaboe, is precipitous and of a brownish color.

The S coast of Pulau Taliaboe has no charted dangers outside the 183m curve which lies from 0.5 mile to 3 miles offshore.

The W coast of Pulau Taliaboe, from **Tanjung Marikasoe** (1˚40'S., 124˚24'E.) on the N, extends 22 miles S to Tanjung Merah. This coast, when seen from the N or S, appears as a monotonous tableland without any remarkable features. Ridges descend to the coast.

Tides—Currents.—A strong current, often exceeding a rate of 3 knots in the channels between the islands, is experienced off the W coast. This current is caused mostly by those in the Molucca Sea and Banda Sea. The predominant direction of the current is S.

The 183m curve lies about 25 miles NW of Tanjung Marikasoe and closes to about 3.5 miles off Tanjung Merah. Within this line there are numerous banks, shoals, and islands which may best be seen on the area chart.

From Tanjung Marikasoe the coast trends 1.75 miles SSW to Tanjung Keja (Tanjung Keya). This area is low and not easily identified. Pulau Manggoa (Manggoa) lies close offshore 5 miles S of Tanjung Keya, and Pulau Deloema (Deluma) lies 2.5 miles farther S. Pulau Limbo lies 2 miles W of Pulau Mangga. The area enclosing Pulau Deloema, Pulau Limbo, the chain of islands NE, and the bank that extends 4 miles W of Tanjung Marikasoe have not been throughly examined.

Pulau Kramat (1˚54'S., 124˚20'E.) lies close offshore 4 miles S of Pulau Deloema and is easily recognized. Tanjung Merah lies 8 miles SSE of Pulau Kramat.

Off-lying Islands

8.35 Pulau Masoni (1˚45'S., 124˚10'E.) is a low island lying 14.5 miles WSW of Tanjung Marikasoe. The passage between this island and Pulau Limbo, 6 miles E, is unsafe due to a reef with a depth of 4.6m, 2.5 miles E of Pulau Masoni, and two 4m patches within 2.5 miles of Pulau Limbo.

Pulau Sekoe (Seku), close NW of Tanjung Merah, 505m high, has a conical shape like a volcano and is prominent. Pulau Kano, lying close SE of Pulau Seku and 0.5 mile SW of Tanjung Merah, is 218m high. The channel between these two islands is only navigable by small vessels with local knowledge.

Selat Boki (Boki Strait), between Tanjung Merah and the two islands close W, is a narrow channel navigable by vessels of moderate size with local knowledge; a strong current sometimes runs through it.

8.36 Selat Capalulu (Tjapaloeloe Strait) (1˚50'S., 125˚19'E.) is a narrow passage separating Pulau Taliaboe on the W, and Pulau Mangoli. This passage, which runs in a N and S direction, is narrowest at the S entrance. The N entrance of the strait lies between Tanjung Fatoekoemboe and Tanjung Wayteya (Tanjung Wajteja), a rocky point 2.25 miles E. The S entrance lies between Tanjung Ndoloedeoe and Tanjung Sakomata, a low, tree covered point, 2 miles E.

The depths in the strait are generally over 16.5m and it can be navigated by large vessels. A 1.2m patch lies close to the E shore about 3.25 miles within the N entrance. A 2.1m patch lies close off the W shore and a 5.8m patch off the E coast, lie about 1.25 miles WNW and 1.25 miles NW; respectively, of Tanjung Sakomata.

Tides—Currents.—The tidal currents in the strait are of mixed character, but are predominantly semidiurnal. The maximum rate of the S current may reach 6 knots during the semidiurnal spring tides, and when the maximum rate of the N diurnal and semidiurnal tides fall together a rate of 9.5 knots may be expected. These two tides fall together in May and June and in November and December during semidiurnal spring

tides. During semidiurnal neap tides, the currents in either direction will not exceed 3 knots.

In the middle and south parts of the strait there are heavy tide rips and eddies when the tidal currents are strong.

Vessels which enter the strait from the N should pass midway in the entrance and proceed southward favoring the E side. When about 3 miles within the entrance, pass 0.14 mile off the W coast, then parallel the W side of the strait, then pass about mid-channel through the S entrance.

From the S vessels should steer for mid-channel and proceed through the strait by reversing the directions given above.

Selat Salue Timpaus

8.37 Selat Salue Timpaus (Greyhound Strait) lies between Kepulauan Sula and Kepulauan Banggai, and is deep and clear of dangers in the fairway. In the N entrance of the strait it is divided by an extensive steep-to bank, defined by the 183m curve, that is about 3 miles wide and 17 miles long running in a N and S direction. This bank has a least depth of 10.9m.

Tides—Currents.—The drift currents in the Molucca Sea and the Banda Sea indicate that either a N or S current may be expected, but it is impossible to state how far tidal influence reaches here. The current sets NNE through the strait throughout the year. A rate of 2 to 3 knots has been observed.

The E side of Selat Tempaus, **Pulau Tempau** (Pulau Timpaus) (1˚51'S., 124˚00'E.), 25 miles SW of the NW extremity of Pulau Taliaboe, is a wooded islet rising to a height of 143m near its center. An isolated hill, 88m high, is located in the N part of the island. The S part is lower with a sandy coast.

A ridge, with depths of less than 14.6m and a least depth of 3.9m, extends 10.5 miles SSE of Pulau Tempau.

A 10m patch lies 9.5 miles SSE of Pulau Tempau. Vessels crossing this ridge are cautioned to keep 1.5 miles S of Pulau Tempau where there is a least depth of 14m.

The W coast of Pulau Taliabu, seen from Selat Salue Timpaus, appears as a high tableland without any noticeable features. Pulau Kano and Pulau Seku are useful landmarks when approaching the strait from S.

Kepulauan Banggai

8.38 The islands, dangers, and shoals that comprise Kepulauan Banggai are described in a clockwise manner from the NE extremity of Pulau Peleng. The straits, currents, and suggested approaches are described in the order of occurrence.

Pulau Peleng (1˚20'S., 123˚10'E.), on the NW side of Kepulauan Banggai, is thickly wooded and mountainous. The island is deeply indented by a bay on its N side and two bays on the S to within a few miles of each other, and nearly divide the island into three parts.

Tanjung Pemali (1˚17'S., 123˚34'E.), the NE extremity of Pulau Peleng, rises almost vertically from the sea and is easily recognized by a large rock which lies close off it. A light is shown at an elevation of 44m from a tower on the N extremity of Pulau Wowoni.

The E coast of Pulau Peleng is free of dangers except for a rocky islet NE of Sambiut (Sambioet), a village situated on the coast 8 miles S of Tanjung Pemali. Both Sambiut and Kamotokan, a village 3 miles N of Sambiut, are visible from seaward. Anchorage can be taken off Sambiut in 37m, SSW of the islet.

Selat Kalumbangan (Kaloembangan Strait), a safe passage that separates Pulau Peleng and Pulau Banggai, is the principal route for vessels from the Molucca Sea to the village of Banggai on the W coast of Pulau Banggai. There is a strong current through the strait of 4 to 7 knots running either NE or SW.

Kalumbangan (Kaloembangan), a village on the N side of the strait, 5.5 miles SW of Sambuit, stands on the coastal reef. On the edge of the drying area in front of the village is a sandflat. There is temporary anchorage in 20m, ESE of this flat.

8.39 **Pulau Banggai** (1˚36'S., 123˚31'E.) lies 1.75 miles off the SE side of Pulau Peleng. The E coast of the island is high and rocky. Pulau Potil Besar, 133m high, is a conspicuous islet lying close E of the N extremity of Pulau Banggai. The rest of the island is low with a rocky coast.

Teluk Lambako (Lambako Bay) lies on the W side of Tanjung Bandana Olipatan, about 7.5 miles SSE of the N extremity of Pulau Banggai. This bay affords sheltered anchorage during the South Monsoon, in the S part of the bay in about 40m.

The W coast of Pulau Baggai is low, as are the off-lying islands to the W. To-ulon Besar (To-eolon Besar) and To-ulon Kecil (To-eolon Ketjil) lie close off the NW side of the island, 4.5 miles SSW of its N extremity. Pulau Bakakang (Bakakang Eilanden), two islands lying close together about 0.5 mile SW of To-ulon Kecil, lie at the SE entrance of Selat Kalumbangan.

Banggai (1˚32'S., 123˚29'E.), the principal village of Kepulaun Banggai, stands at the head of Teluk Banggai, 2.5 miles ESE of Pulau Bakakang. A mosque, with a high roof, is conspicuous from a considerable distance.

Anchorage can be taken, in 12.8m, with a landing pier in line with the mosque, bearing 100˚. A 6.7m patch lies about 4.5 miles WSW of Pulau Bakakang.

There is a jetty for the discharge of oil products, with a depth alongside of 6m. Vessels up to 900 dwt and 65m in length may berth.

8.40 **Pulau Bandang** (Bandang Eilanden) (1˚41'S., 123˚27'E.), two low islands, lie off the SW side of Pulau Banggai, 6 miles SSW of Banggai. Pulau Kenau (Kenaoe) lies close off the S coast of Pulau Banggai, 5 miles SE of Pulau Bandang.

Besar Salue (Great Saloee) (1˚57'S., 123˚49'E.) along with Kecil Salue (Little Saloee), close SSE, lie on the W side of Selat Salue Timpaus at the SE end of the plateau on which Kepulauan Banggai lies.

These islands when viewed from the NE, E, and SE appear as a single high ridge with sharp peaks. Besar Salue rises to an elevation of 464m; Kecil Salue rises to an elevation of 311m.

Pulau Belangan (Belangan) rises steeply from the sea to a height of 166m, close W of the N extremity of Besar Salue. Another steep-to, rocky, wooded islet lies 1.25 miles SE of the same point.

A low wooded islet is located 0.5 mile NE of Kecil Salue, in the E entrance of the passage between Besar-Salue and Kecil Salue. Southeast and S of Kecil Salue there are large drying reefs and low islets.

Between Besar Salue, Kecil Salue, and **Pulau Sago** (Sago) (2˚12'S., 123˚10'E.), 42 miles WSW, there are numerous islets and reefs. Some of these islets and reefs are separated by narrow channels of 183m. Pulau Sago, about 131m high, lies on a drying reef which shows discoloration. There are some islets on the S part of the reef.

Karang Vesuvius (Vesuvius Reef) (2˚06'S., 122˚53'E.), the farthest W of three large, steep-to, drying reefs, lies about 17 miles WNW of Pulau Sago. The other two drying reefs lie 9 miles ENE and 3 miles SE; respectively, of Karang Vesuvius.

A small house, whose charted position is approximate, stands on the latter reef. All of these reefs show discoloration.

Pulau Bangkoeloe (Pulau Bankulu) (1˚50'S., 123˚06'E.), 14 miles NNE of Karang Vesuvius, rises to a height of 693m near its middle. Pulau Labobo, another wooded island, lies 7 miles E of Pulau Bangkoeloe.

Pulau Bongko (Bongko), a low wooded islet surrounded by a drying reef that discolors, is located 2.25 miles N of Pulau Bangkoeloe.

A bank, with a least depth of 3.7m, extends 3 miles N from Pulau Bongko. A 6.7m patch lies 5.75 miles ESE of Pulau Bongko.

Vessels approaching Banggai from the W should steer to pass about midway between the N extremity of Pulau Bangkulu and Pulau Bongko. When the vessel is directly S of Pulau Bongko, steer for Banggai passing N of Pulau Labobo.

Pulau Pelang—South Coast

8.41 **Tanjung Kembani** (1˚36'S., 122˚53'E.), the SW extremity of Pulau Peleng, is a low spur rising to the mountains northward. The point is marked by a light. Several reefs and dangers lie within a radius of 5 miles of Tanjung Kembani.

Teluk Peleng (Peleng Bay), entered between Tanjung Kembani and Tanjung Patipakaman, 13 miles E, is free of dangers except near the coast. Pulau Tetapen, 107m high, is located at the head of the bay and can be seen for a considerable distance as can the villages that are in the N part. Lolantang, on the W shore 13 miles NNE of Tanjung Kembani, is the principal village in the bay.

The large dry areas and danger areas that lie off the entrance of Teluk Peleng show discoloration when submerged.

Teluk Mesamat (Mesamat Bay) (Paisoeloenoe Baai) is entered E of a point that lies 9.5 miles ESE of the E entrance of Teluk Peleng. The two bays are separated by a peninsula that rises to a conspicuous summit 306m high, near its SE extremity.

Teluk Mesamat is obstructed with several shoals in its NE part. The many shoals along the N and W sides show discoloration. Liang, the principal village in the bay, lies in an inlet on the W coast, 5.5 miles within the entrance. Pulau Bobo (Bobo), a conspicuous rocky islet, lies off the S coast about midway of the peninsula separating the two bays.

Palau Pelang—West Coast

8.42 From Tanjung Kembani, the coast trends NW 9 miles, then 19 miles to Tanjung Batu Putih, the island's NW extremity.

The W coast of Pulau Peleng is mountainous, but the summits are difficult to identify. The 183m curve lies 3.25 miles SW of Tanjung Kembani, but closes to 0.2 mile off the W coast 16 miles farther N. There are several islands and shoal areas within the 183m curve along the SW coast.

Pulau Lesampuang (Lesampoeang) (1˚30'S., 122˚44'E.) is a conspicuous islet surrounded by a steep, drying coral reef. The islet lies 3 miles offshore, 10.75 miles NW of Tanjung Kembani.

Karang Thames, marked by a light and lying nearly in the middle of Selat Peleng, 6.5 miles SW of Pulau Lesampuang, is an oval-shaped, steep-to, coral reef which partly dries at low water. When covered, it is marked by surf and a light green coloration.

The reef has two deep basins in its center. Pulau Makailu (Makailu) is an islet, partly wooded with tall trees, and surrounded by a large dry reef. The islet lies 3.5 miles offshore, 9 miles N of Pulau Lesampuang.

Palau Pelang—North Coast

8.43 **Tanjung Batu Putih** (1˚11'S., 122˚55'E.) is a steep point with two white rocky patches. The N coast, like the W coast of Pulau Peleng, is mountainous. The coast is steep outside the bays and should not be approached too closely.

Tanjung Bakalinga (1˚09'S., 123˚12'E.), a low, coconut palm covered point 17 miles E of Tanjung Batu Putih, is the NW entrance point of Teluk Bangkalan.

Teluk Bangkalan is entered between Tanjung Bakalinga and a point 11.5 miles ESE. The bay affords good anchorage throughout.

Pulau Bangkalan Pauno (North Bangkalan) (1˚10'S., 123˚17'E.), a moderately-high and densely-wooded island, lies in the middle of the entrance of the bay.

Pulau Bangkalan (South Bangkalan), also densely wooded but low and flat, lies S of Pulau Bangkalan Pauno. The two islands are separated by a deep channel free of dangers, but it is not recommended because of strong currents.

The passage either on the E or W side of the above two islands is clear of dangers. A 12m patch in the N part of the E channel is usually marked by discoloration.

A group of islands lie near the SW shore of the bay.

On the E shore of the bay, the villages of Lamobuang and Salakau lie 7 and 8 miles SSW, respectively, of the entrance. A zinc roofed building in Salakau affords a good landmark. The coastal reef in the vicinity of Salakau extends 0.65 mile NW and is steep-to.

A dome-shaped mountain, 456m high, rises at the head of the bay. A prominent peak, 558m high, rises 4 miles ESE of Lamobuang.

Tides—Currents.—The currents in the strait run either N and E or S and W.

The currents to the N and E are more frequent and stronger, sometimes attaining a rate of 2 to 3 knots. In the NE entrance, the tidal currents may attain a rate of 4 knots under the shore of Pulau Peleng.

During the night, the strait is often calm and free of wind.

Anchorage.—Anchorage can be taken about 0.4 mile N of Salakau, in a depth of 33m.

Teluk Lelomping (Lelomping Bay) is entered 1.5 miles E of the E entrance of Teluk Bangkalan.

The E entrance of the bay is a low point covered with coconut palms, 2 miles farther ESE. An island close off the W entrance of the bay is conspicuous.

A bank, with a least depth of 11m, lies 1 mile N of this island. The bank can be distinguished by its light-green discoloration and often by tide rips.

Anchorage may be taken in the bay, except during N winds, in depths of 15 to 16m, 0.65 mile ENE of two rocky islets at the head of the bay. The depths decrease rapidly S of this position. The bay may be entered steering for the houses of Luwuksago, a village at the head of the bay.

Tanjung Pemali, rising almost vertically from the sea and readily identifiable by a large above-water rock, is the NE extremity of Pulau Peleng and lies 7.5 miles ESE of the entrance of Teluk Lelomping.

Selat Peleng lies between the N and W coasts of Pulau Peleng on the E, and the coast of Sulawesi between Tanjung Botok and Tanjung Menahakeh, on the N and W sides. The strait is deep and almost free of dangers. The dangers on the E side of the strait have been discussed with the W coast of Pulau Peleng. This channel is the usual route for vessels to and from Teluk Tomini, and the E coast of Sulawesi farther S.

Sulawesi—Tanjung Pangkalaseang to Tanjung Nederburgh

8.44 The coast S of **Tanjung Pangkalaseang** (0˚42'S., 123˚27'E.) to Tanjung Botok, 21 miles SSE and along the W side of Selat Peleng to Tanjung Maoloh, 44 miles farther WSW, is for the most part high with mountains close inland. The mountains that lie W of Tanjung Pangkalaseang and Tanjung Botok are generally hidden by clouds, but the high steep points along the coast provide useful landmarks.

South of Tanjung Maoloh the coast is low for about 32 miles, then the mountains approach the coast again. A conspicuous summit, 1,698m high, is located 20 miles WNW of Tanjung Menahakeh. A mountain range 25 miles WSW of this conspicuous peak, running in a SSE and NNW direction, is easily recognized. The northern and highest summit attains a height of 2,629m.

The coast S of Teluk Tomori (Tomori Baai) to Tanjung Nederburgh has a few conspicuous peaks that run close along the coast.

The 183m curve runs close to the Sulawesi coast from Tanjung Pangkalaseang to the S part of Selat Peleng, then it gradually extends offshore. Innumerable reefs lie inside this line from 1˚33'S to the entrance of Teluk Tomori.

These reefs are generally marked by discoloration and the water is clear, but the utmost caution must be exercised when navigating in this vicinity.

From Teluk Tomori S to Nederburgh, the 183m curve lies from 2 to 6 miles offshore. The reefs inside this line also show good discoloration.

Tanjung Talabu (0˚46'S., 123˚27'E.), 4 miles S of Tanjung Pangkalaseang, rises perpendicularly from the sea. Karang Tetek (Batu Tetek) are two drying reefs close N of Tanjung Talabu. The heavy breakers over these reefs can be seen from a great distance. Pulau Dua are two islets lying close off the coast, 3 miles S of Tanjung Talabu. The N islet, which is larger, is about 99m high and has a sandy beach on its N side. A partly drying reef lies 0.2 mile N of the sandy beach.

Belantak (0˚52'S., 123˚24'E.), a large village, lies in a bight 4.5 miles SW of Pulau Dua and close SW of a bluff point fringed by a reef. There are some noticeable white rocks 0.5 mile S of the village. At the N end of the village there are some prominent warehouses and at the S end there is a mosque with a dome.

Anchorage may be taken S of the bluff point, in depths of 20 to 29m, mud and sand. With winds from seaward, there is frequently a long swell rendering landing impracticable.

Tanjung Dongolala is a high, steep point located 5 miles S of Belantak. A 4.9m reef lies inside the 183m curve, 3 miles S of Tanjung Dongolala.

8.45 **Tanjung Botok** (1˚03'S., 123˚20'E.), 7 miles SSW of Tanjung Dongolala and Tanjung Sentigi, 3.5 miles W of Tanjung Botok, mark the NE entrance of Selat Peleng. Teluk Lamala is a large bay whose entrance is located about 13 miles NW of Tanjung Sentigi. There are depths of 20 to 51m in the bay. A shoal with a depth of 1.8m lies in the middle of the entrance. This reef is scarcely marked by discoloration.

Teluk Arjuno (Teluk Ardjuno) is a narrow inlet entered 3 miles W of Teluk Lamala. The entrance is almost closed by a reef with four islets on it, but there is a deep, narrow passage on either side.

Luwuk (0˚57'S., 122˚48'E.) (World Port Index No. 52220), a village, stands on the shore close N of Tanjung Tumbuk. It is an administrative center and an important collecting place for copra and forest products. There is a 30m long concrete wharf with a depth of 6m alongside.

Pertamina Light (0˚56.5'S., 122˚48.7'E.) is shown from a height of 10m, 1 mile NE of Tanjung Tumbuk.

There is an oil jetty, with a depth alongside of 6.3m. It can accommodate vessels up to 6,500 dwt and 130m long.

Berthing is done during daylight hours.

The open road off Luwuk provides good anchorage about 0.27 mile offshore, in depths of 45m. The anchorage should be approached with the cleft in the mountains behind the village, bearing 315˚.

When a vessel is expected at Luwuk, a light is shown at a height of 15m, from the N end of the village.

Vessels should send their ETA, stating arrival draft, to their agent 10 days, 3 days, 48 hours, and 24 hours prior to arrival.

Pilotage is not available.

8.46 **Mendono** (1˚08'S., 122˚42'E.), a village 12 miles SSW of Luwuk, stands partly on the coast near a river and partly on a plateau formed by a ridge from the mountains. This plateau has conspicuous light green patches.

Anchorage may be taken, in a depth of 40m, SW of the village, 0.2 mile offshore.

Luk, a village, lies at the head of a small, deep bay immediately NW of Tanjung Batui, 12 miles SSW of Mendono. Anchorage is available in 44m, about 0.15 mile SE of the village.

The coast S of Tanjung Batui is low for a distance of about 35 miles, where the mountains approach the coast again. A barrier reef lies along the 183m curve from a position S of

Tanjung Menahakeh, across the entrance of Teluk Tomori, to where it approaches the coast again SE of Teluk Tomori.

Tanjung Menahakeh (1˚30'S., 122˚23'E.), a low point which is the SW entrance of Selat Peleng, lies 16 miles SW of Tanjung Batui. Tanjung Donggi, also a low point, is located 10 miles SW of Tanjung Menahakeh. The village of Donggi is situated on the bank of a small river that enters the sea, close N of Tanjung Donggi.

Anchorage may be taken, by vessels with local knowledge, in depths of 18 to 22m E of Donggi, 0.5 mile offshore.

The village of Bua Buang (Boea Boeang) is situated in a bight about 14 miles WSW of Tanjung Donggi. A river enters the sea about 1.5 miles SW of Bua Buang.

Tanjung Damari (1˚41'S., 121˚56'E.) is a high point 8 miles SW of Bua Buang. The coast between these points is high. The reefs in this area may be seen on the chart.

The coast between Tanjung Damari and the village of Tirongan, 8.5 miles SW, is steep, rocky, and forms several bays. A few islets lie on the coastal reef. South of Tirongan to Tanjung Bea, 16 miles distant, the coast is low, swampy, and inaccessible. The principal village along this stretch is Tukala (Toekala), 3.5 miles SSW of Tirongan, which can be recognized by its flagstaff.

Teluk Tomori

8.47 Teluk Tomori (Tomori Baai) is entered between **Tanjung Bea** (1˚58'S., 121˚38'E.) and Tanjung Bahuembelu (Tanjung Bahoembeloe), 13.5 miles SSE. There are several dangers in the bay which has general depths of 37 to 62m. Inside the bay are several smaller bays, the principal ones being Teluk Tambayoli (Tambajoli Baai) at the head and Teluk Lambolo (Lambolo Baai) on the SW side. The water in these two bays is exceptionally clear.

The shores of the bay and the islands within the bay are sparsely inhabited. The land on either side of the entrance is low, but elsewhere in the bay it is mountainous except at the head of Teluk Tambayoli.

The largest island in the bay rises to a height of 602m and lies in the entrance of Teluk Tambayoli. Essentially, the several islands in Teluk Tomori may be divided into two main groups. One group in the outer part stretches across the bay in an E and W direction. The other group runs in a N and S direction and divides Teluk Lambolo into two parts.

Tanjung Onematubu (Tanjung Onematoeboe) (1˚57'S., 121˚33'E.), 3 miles W of Tanjung Bea, is also low. A light is shown from a 16m high black and white banded tower on Tanjung Mposo, 2 miles W of Tanjung Onematubu. Good anchorage is found near the edge of the bank off the mouth of a small river, 5.75 miles NW of Tanjung Onematubu.

In Teluk Tambayoli there is anchorage in 18.3 to 22m, at a suitable distance from the mouth of the Sungai Bayoli (Sungai Bajoli). This river enters the bay in its N extremity.

Teluk Lambolo is entered between a point 6 miles SSE of **Sungai Bayoli** (1˚53'S., 121˚21.5'E.) and a point 2.5 miles further SE.

8.48 **Kolonodale** (1˚59'S., 121˚20'E.) (World Port Index No. 52230), a village situated on the W side of Teluk Lambolo, 5 miles within its entrance, is an administrative district.

There is a pier which is suitable for boats at all times. A prominent white customs house stands close N and the village is marked by a light.

There is an oil jetty for the discharge of kerosene with an alongside depth of 6.5m. Vessels up to 900 dwt and 65m long can berth.

Anchorage.—Anchorage may be taken, by vessels with local knowledge, 0.15 mile E of the pier in depths of 11 to 13m.

Directions.—To approach Kolonodale from the N, a vessel will cross the 183m curve close N of a beacon standing on the N end of a reef (1˚57.6'S., 121˚51.8'E.), 14 miles E of Tanjung Bea. Bring this beacon astern, bearing 080˚, until an uncharted hill, 180m high, located on the coast 2.5 miles NW of Tanjung Lingkobu is sighted on bearing 260˚, which is the course to be steered.

When the summit of an islet 9 miles NW of Tanjung Lingkobu bears 282˚, steer that course. When the small islet charted 1.5 miles offshore, 7 miles WNW of Tanjung Bea, is in range with the middle of the large island that fronts Teluk Tambayoli, steer NW on that mark. When near the small islet, the front mark above, pass E and then bring the islet on the coastal reef off the NE point of the large island above, in range with the projecting point about 3.25 miles SE, bearing 312˚. Continue on the last mark until the NE point of the large islet in the mouth of Teluk Lambolo bears 265˚, then steer for Teluk Lambolo on that mark. Steer for the anchorage off Kolonodale by passing E of the island group that divides Teluk Lambolo.

Vessels that approach the bay from S steer a course parallel to the coast until abeam of Tanjung Dongkala, 12 miles SE of Tanjung Bahumbelu. When Tanjung Bea bears 320˚, steer that course taking due note of the reefs until the 282˚ mark described above comes in range, then proceed as previously described.

The Sungai La, one of the largest rivers in central Sulawesi, discharges into the mouth of Teluk Tomori, 9 miles SE of the E entrance point of Teluk Lambolo. The N arm of the river has depths of 1.5 to 1.8m.

Tanjung Lingkobu (Tanjung Lingkoboe) (2˚03'S., 121˚32'E.) is located on the S shore of Teluk Tomori, 3 miles SE of the mouth of Sungai La. The bight formed between Tanjung Lingkobu and Tonjung Bahumbelu, 12 miles SE, is free of dangers except for a drying reef, 0.75 mile W of Tanjung Bahumbelu.

Tanjung Dongkala (2˚18'S., 121˚49'E.) lies 11.5 miles SE of Tanjung Bahumbelu. South of the point there are a few conspicuous peaks, and the 183m curve lies close to the coast to Tanjung Losoni, 26 miles SSE. The isolated reefs within the 183m curve show good discoloration.

Vessels can anchor off Wosu (Wosoe), a village about 3.5 miles S of Tanjung Dongkala, in 18 to 22m, with the middle of the village bearing 225˚, taking care to avoid four drying reefs and rocks lying 0.4 mile E of the village.

8.49 **Bungku** (2˚33'S., 121˚58'E.), a village with considerable trade in forest products and an administrative center, lying 13.5 miles SE of Wosu, may be identified at a great distance by Gunung Kondeh (Kondeh), 576m high, 1.5 miles inland. The village of Bungku is hidden by coconut palms. There is a stone pier extending NE from the shore. There is a break in the barrier reef, about 0.3 mile wide, NE of the pier.

The reefs are steep-to and the small detached 2.1m patch on the N side of the reef is not easily seen.

Anchorage, open to E and S winds, is available in 29 to 44m, NE of the head of the pier.

Losoni, a small village, lies in a small bight about 5.25 miles SSE of Bungku. Only a few houses are visible from seaward. Two large detached reefs, which dry in places, run parallel to the coast NE of Losoni. The reefs, which lie about 1 mile offshore, have a deep passage between them about 0.4 mile wide. There is good anchorage in 29m as far S as possible in the bight between the reefs and the shore.

8.50 Tanjung Losoni (2˚40'S., 122˚02'E.), 3.75 miles SSE of Losoni, is steep, rocky, and can be identified by three hills, the highest with an elevation of 214m. A reef, which dries, extends from the coast for 2 miles NW of the point. The point is marked by a light.

In the bight between Tanjung Losoni and Tanjung Laroga, 9.5 miles SSE, there is a strip of land along the coast. The mountains lie a short distance inland. Two large villages lie close SW of Tanjung Losoni near the entrance to a cleft in the mountains.

Anchorage may be taken, by vessels with local knowledge, off these villages, in depths of 50m.

Tanjung Lalompa lies 8.5 miles SE of Tanjung Laroga.

Steep-to reefs lie close within the 183m curve E of Tanjung Laroga. Pulau Alangalang (Alangalang) lies on the coastal reef that extends SE from Tanjung Laroga.

A drying reef lies close inside the charted 183m curve, 2 miles NE of Tanjung Lalompa, and a reef awash lies 1.75 miles ENE of the same point, outside the 183m curve.

Tanjung Nederburgh lies 5 miles SE of Tanjung Lalompa. Reefs with depths of 0.9 to 3m lie off the coast between these two points.

Teluk Tolo (Golf Van Tolo) (2˚20'S., 122˚30'E.) is a body of water that lies SW of Kepulauan Bangai and is bound on the W by the E coast of Sulawesi.

The bay is entered from the N through Selat Peleng and the SE entrance is from the Banda Sea. Teluk Tolo is about 63 miles wide between Pulau Sago on the NE, and Tanjung Nederburgh to the SW.

The dangers off Kepulauan Banggi in Teluk Tolo are described with that group of islands, and the dangers that lie along the 183m curve off Sulawesi have been discussed.

Southeast Coast—Tanjung Nederburgh to Roode Hoek

8.51 Tanjung Nederburgh (2˚55'S., 122˚19'E.) is a high, steep promontory that forms the NW entrance of Selat Salabangka (Salabangka Strait).

Karang Bantam (Bantam Reef), with a depth of 3.2m, lies about 2.5 miles NNE of Tanjung Nederburgh. A shoal, with a depth of 0.9m, lies about 2.5 miles N of the same cape.

Batu Manu (Batoe Manoe), a rock covered with vegetation, lies close off Tanjung Nederburgh.

Selat Salabangka (Salabangka Strait) (3˚04'S., 122˚20'E.) is a deep strait lying between Kepulauan Salabangka (Salabangka Islands) and the Sulawesi (Celebes) coast. The N entrance narrows to about 0.4 mile and has strong tidal currents running through it.

The coast of Sulawesi in the vicinity of the strait has no landmarks of importance, except a white patch W of **Tanjung Salabangka** (3˚03'S., 122˚17'E.). The points along the strait are generally low and marked by tall vegetation.

The barrier reef discolors along the W side of the N entrance to the strait. A drying patch lies on this reef in a position about 3.5 miles SSW of Tanjung Nederburgh.

Kepulauan Salabangka (Salabangka Islands) (Salabangka Eilanden) (3˚04'S., 122˚28'E.), a chain of islands, extends about 21 miles ESE from a position about 4.5 miles S of Tanjung Nederburgh. These islands are low and covered with shrubs, except for a conspicuous 202m hill on the S side of **Pulau Umbele** (Oembele Island) (3˚04'S., 122˚30'E.). All the islands are fringed by a drying reef with many detached reefs inside the 183m curve.

There is a deep passage through the middle of the group between Palau Umbele and Pulau Bunginkela (Boenginkela), about 2.25 miles W. Karang Karel (Karel Bank), a reef which dries, lies in the SW entrance to this passage. There are numerous shoal patches in the NE approach. This passage can only be used when the reefs are clearly marked by discoloration and the tidal currents are not strong.

Kepulauan Sinoa (Sainoa Islands), the SE group, consists of a few low islands and several rocks, some of which are partly covered with vegetation. The whole area shows discoloration, the light green color being visible at a great distance. A conspicuous tree stands on the S part of the island.

8.52 Pulau Togomogolo (Togomogolo) (3˚13'S., 122˚38'E.), low, well-wooded, and marked by a large tree, lies about 4 miles SE of Kepulauan Salabangka.

A reef projects about 0.3 mile W from **Pulau Papado** (Padabale) (3˚01'S., 122˚20'E.).

A reef, with a depth of 4m, lies about 5.5 miles WNW of **Tanjung Baja** (Tanjung Baya) (3˚08'S., 122˚25'E.). A detached reef lies about 1 mile NE of Tanjung Baja.

General Pel Reef, consisting of two rocky heads, with a least depth of 0.9m, lies about 2 miles NE of **Tanjung Tapaulama** (Tanjung Tapoaoeloeno) (3˚11'S., 122˚29'E.).

Karang Adder (Adder Reef), with a least depth of 4.5m, lies in the S fairway, about 2 miles E of Tanjung Tapaulama. This reef is seldom marked by discoloration.

Directions.—Approaching Selat Salabangka from the N, bring the white patch W of Tanjung Salabangka in line with the beacon W of Pulau Papado, bearing 216.5˚. The beacon can be rounded within 100m.

Hold this course until Pulau Hondor, an island lying on a reef about 3 miles SSE of Pulau Papado, bears 107˚, then bring Tanjung Baja in line, bearing 120˚, with Tanjung Nonna (Tanjung Togotonona).

This course passes S of the buoy marking the 4.1m patch lying in mid-channel and should not be approached within 100m. Alter course E, taking care not to pass within 27m of the beacon off Tanjung Baja.

General Pel Reef is easily passed N on a course of 120˚ by keeping Pulau Hondor bearing 300˚ astern.

When the summit of **Pulau De Haan** (De Haan) (3˚29'S., 122˚29'E.) is in range with the E side of the western Pulau Dua, bearing 188˚, course can be shaped more to the S in order to clear Pulau Togomogolo.

Only vessels with local knowledge should attempt the passage W of General Pel Reef and Adder Reef.

8.53 Teluk Tampakura (3˚12'S., 122˚27'E.), located S of Tanjung Tapaulama, is encumbered with numerous reefs, some of which dry.

The coast S of Teluk Tampakura is broken and forms three bays, Teluk Matarape (Matarape Bay), Teluk Dalam (Telok Dalam), and Teluk Lasolo (Lasolo Bay).

The most conspicuous mountains near the coast are the peaks on Pulau Labengke, Pulau Bahulu (Bahoeloe), and the mountain tops close to the coast S of Teluk Lasolo.

The only river of importance on this part of the coast is the **Sungai Lasolo** (Lasolo River) (3˚34'S., 122˚14'E.) which discharges with three mouths abreast Pulau Bahulu.

Pulau Labengke (Labengke) (3˚27'S., 122˚26'E.), 715m high, lies off the high peninsula separating Telok Dalam and Teluk Matarape.

Selat Labengke (Labengke Strait), 1 mile wide, separates the island from the peninsula. The sides of the strait rise steeply from the sea.

Three large and several small islands, with several reefs in the vicinity, lie in Teluk Matarape.

Caution.—A large number of reefs have been reported in the three bays mentioned above.

Off-lying Dangers

8.54 Pulau Dua (Poeloe Doea) (3˚16'S., 122˚31'E.), two low islets 2 miles apart and covered with trees, lie on detached drying reefs about 5.5 miles SSE of Tanjung Tapaulama.

Karang Hinder Utara (North Hinder) (3˚16'S., 122˚28'E.), with a least depth of 0.5m, lies about 5 miles SSW of Tanjung Tapaulama.

Karang Hinder Selatan (South Hinder) (3˚18'S., 122˚30'E.), a small drying reef, lies 2.5 miles E of Pulau Van Leeuwen, a conspicuous island off the NE entrance of Teluk Matarape. The reef is marked by a beacon.

A reef, which dries, and a rock awash lie about 1.25 miles and 1 mile SE, respectively, of Karang Hinder Selatan.

Gosong Utara (North Bank) (3˚23'S., 122˚30'E.), a small drying reef with stones, lies about 5 miles E of the N extremity of Pulau Labengke. Two reefs awash lie about 1.5 and 4 miles NW, respectively, of Gosong Utara.

A reef, with a depth of 0.9m, lies about 3.5 miles WNW of the same bank.

Gosong Selatan (South Bank) (3˚26'S., 122˚30'E.), about 5.75 miles ESE of the N extremity of Pulau Labengke, is 1.5 miles long with a small sand shoal near its N end, partly dry at high water.

Karang Serdang (Serdang Reef) (3˚24'S., 122˚32'E.), with many rocks awash, lies about 2 miles NE of Gosong Selatan.

Pulau De Haan (3˚29'S., 122˚29'E.), about 144m high, lies about 1 mile E of Pulau Labengke. A detached reef, with a least depth of 0.9m, lies about 1.5 miles E of Pulau De Haan.

North Reef (Noord Rif) (3˚32'S., 122˚30'E.), with a least depth of 2.7m, lies about 2.5 miles SSE of Pulau De Haan.

Karang Selatan (South Reef) (3˚46'S., 122˚31'E.), with a least depth of 1.8m, lies about 4.75 miles E of **Tanjung Sawah** (Tanjung Sawa) (3˚45'S., 122˚27'E.). It is not marked by discoloration.

Vessels with local knowledge can take anchorage in the bay between Tanjung Sawah and Tanjung Teipa (Tanjung Taipa), about 3.5 miles WNW. Vessels must exercise caution in this area because of the poor visibility of the reefs.

A well protected anchorage, with depths of about 14.6m to 28m, was reported to lie in the N part of Teluk Lasolo (Lasolo Bay), S of the Sungai Lasolo delta.

8.55 Pulau Manui (Pulau Manuei) (3˚36'S., 123˚08'E.) is the southernmost of a group of islands and reefs extending NW and W to Pulau Dua. It is rocky and steep-to except on its N and NW sides. Ulunambu (Oeloenamboe), situated on the N coast, is the only village on the island. A barrier reef fronts the central part of the N coast with its outer edge about 1 mile offshore. There is an opening 0.2 mile wide in the barrier reef off Ulunambu. A light is shown from the SE extremity of Pulau Manui.

Vessels with local knowledge can take anchorage off the village of Ulunambu close inside the opening in the barrier reef in depths of 46m to 55m. Vessels must exercise caution to avoid a reef, with a depth of 4.9m, in the middle of the opening.

Karang Pangadjarang (Karang Pangajarang), a horseshoe-shaped reef, lies about 24 miles WNW of Pulau Manui.

Padea Ketjil (Pulau Padea Kecil) (3˚33'S., 123˚02'E.) and Padea Besar (Pulau Padea Besar) are low, partly-wooded islets lying on reefs about 2.5 miles NW of Pulau Manui.

Pulau Kokoila (Kokoila) (3˚29'S., 122˚54'E.) is low and covered with shrubs. Pulau Loenasoealoe (Pulau Lunasualu) (Loenas Waloe), located 4.5 miles NE of Pulau Kokoila, is low and thickly timbered. Pulau Samaringa (Samaringa), located about 8 miles NW of Pulau Kokoila, is low, wooded, and stands on the N end of a drying reef.

Pulau Tiga (Poeloe Tiga) (3˚23'S., 122˚36'E.), a group of three islets, lies on drying reefs about 1 mile apart.

Directions.—Vessels proceeding from a position in the S entrance to Selat Salabangka with the summit of Pulau De Haan in line with the E side of the W Pulau Dua, bearing 188˚, should steer a course of between 203˚ and 210˚ in order to pass at least 50m W of the beacon marking Karang Hinder Selatan (South Hinder). Then alter course to about 173˚ to pass at least 100m E of the beacon marking Gosong Utara (North Bank), then alter course to pass at least 77m E of the beacon marking Gosong Selatan (South Bank). When the beacon marking Gosong Selatan is in line astern with the E point of Pulau Van Leeuwen, this bearing is followed until a course can be changed for Tanjung Nipanipa.

Caution.—All the islets in the previously mentioned chain are low, and on many of the drying reefs are sand cays which only cover at HW. During the Southeast Monsoon, there is a heavy surf.

Vessels should avoid the area in which this chain of islets lies due to the numerous dangers and uncertain tidal currents.

8.56 Tanjung Nipanipa (3˚54'S., 122˚40'E.) is a very conspicuous steep point on the coast of Sulawesi. The coast in the vicinity of the point curves S and W forming a funnel-

shaped bay with Pulau Boengkoetoko (Pulau Bungkutoko) lying in the inner part.

Pulau Bakori (Bakori), lying on the NW side of a large detached reef, 2.5 miles S of Tanjung Nipanipa, does not show up plainly against the land.

Pulau Saponda Utara (North Saponda) (3˚53'S., 122˚49'E.), lying on a detached bank about 9.25 miles E of Tanjung Nipanipa, is low and covered with high trees.

A reef runs about 3 miles W and 1 mile E of the island. A channel, about 3.5 miles wide, lies between this reef and the coastal reef extending from Tanjung Nipanipa. A bank, with a least depth of 4.5m, extends 3.5 miles W of Pulau Soponda Utara.

Sappa Djambi Bank (Sappa Jamba) (3˚59'S., 122˚41'E.), about 5 miles S of Tanjung Nipanipa, is about 2.5 miles in length, the W part of which dries. A lighted beacon stands on the N edge of the reef.

Middle Saponda (Pulau Middle Saponda) (3˚59'S., 122˚46'E.) lies near the W end of a large reef extending about 1.5 miles W and 3 miles E of the island. It is low with several large trees. A light marks the island.

Karang Lingoro (Lingoro Reef), with a least depth of 6.9m, lies about 3 miles E of Pulau Middle Saponda.

Pulau Saponda Selatan (South Saponda) (4˚02'S., 122˚46'E.), located 1 mile N of Tanjung Laonti, is a low islet covered with high trees. A small reef that dries lies 0.2 mile WSW of Pulau Saponda Selatan. The fringing reef extends about 0.2 mile NE and N from the islet.

Karang Puluhari (Poeloehari Banks) (4˚01'S., 122˚45'E.), 4 miles long E and W and drying in places, lies midway between Pulau Middle Saponda and Pulau Saponda Selatan.

Caution.—Numerous dangers and obstructions have been reported in the channel between Pulau Saponda Selatan and the mainland, and across the channel between Palau Saponda Selatan and Karang Puluhari. They also lie E of the S end of Sappa Djambi Bank.

8.57 Teluk Kendari (Kendari Bay) (3˚58'S., 122˚35'E.) (World Port Index No. 52240), is a bay where the N passage leading into it, is about 137m wide at its narrowest point. Inside the entrance the bay gradually widens, but a broad mudbank fills the inner part. Tidal currents in the bay and its approaches are strong at times.

The beacons marking the channel leading into Teluk Kendari may be missing or damaged, and the reefs which they mark have extended. Pilots are not available. Vessels without local knowledge should not attempt to use this channel.

A flagstaff stands on the W side of Pulau Bungkutoko, from which a cone or ball is displayed when a vessel is sighted.

Kendari, a large village and an administrative center, stands on the W side of an inlet in the N shore of the bay near the entrance. The S shore of the bay opposite Kendari should be given a wide berth as reefs extend about 0.2 mile offshore. There is a 220m long berth, with an alongside depth of 9m, which can accommodate vessels up to 5,000 dwt.

Pilotage.—Pilotage is available but is not compulsory. Vessels should send ETA messages 10 days, 3 days, 48 hours, and 24 hours prior to arrival to the local agent, stating arrival draft and whether a pilot is required. The pilot boards, as follows:

1. In the anchorage S of Tanjung Cabi.
2. East of the entrance passage leading into Teluk Kendari.

Anchorage.—Vessels with local knowledge can take anchorage in the swept area bounded by the meridians of 122˚34'20"E, 122˚36'33"E, off Kendari in depths of 15m to 18m, soft mud.

Anchoring and fishing are prohibited within 0.1 mile of a line indicated by notice boards which mark the landing places of a telephone cable laid across the entrance of the bay, about 0.5 mile W of Pulau Bungkutoko.

Teluk Wawosungu (Staring Bay) (4˚05'S., 122˚44'E.) is entered between **Tanjung Wowobatu** (Tanjung Wowobatoe) (4˚02'S., 122˚40'E.) and Tanjung Laonti, about 6 miles ESE. The bay is of little importance to shipping. It is backed by high, partly inaccessible mountainous land, and except in the SW corner, it is sparsely inhabited. The shores of the bay are fronted by a broad coastal reef and there are several shoals and drying rocks in the bay.

Pulau Wawosungu (Pulau Wawasoengoe), the largest of several islets along the shore of Teluk Wawosungu, lies 4.5 miles SW of Tanjung Laonti and is joined to the coast by a drying reef.

Vessels can take anchorage anywhere in the bay. Good anchorage exists off a small bay S of Pulau Wawosungu.

Moramu Telok (Teluk Moramu) is an inlet which indents the coast about 2 miles in the SW part of Teluk Wawosungu. Depths of 11.5 to 26m are found in the inlet.

Three reefs, one of which dries, lie in mid-channel close inside the entrance.

Directions.—From Selat Wowoni, pass S of South Saponda and the detached reef SW of it. Then the S channel should be entered by the passage between the SW side of Karang Puluhari and the detached reef marked by a beacon SW of it. The hill (Kendari Heuvel), 2.25 miles NW of Tanjung Wowobatu, is a useful mark to steer for until this beacon is sighted.

When within the channel entrance, alter course and pass between the beacons on the NE side of Sappa Djambi Bank and E of the beacon on the detached reef on the opposite side of the channel. The beacon on the detached reef can then be rounded, and course changed for the entrance to Teluk Kendari, when the hill (Kendari Heuvel) comes into line with a mountain, 3 miles SW, bearing 219˚.

A swept channel from the E leads to the entrance to Teluk Kendari, the center line of which is joined by the following positions:

1. 3˚58'03"S, 122˚40'57"E.
2. 3˚58'30"S, 122˚37'35"E.
3. 3˚58'20"S, 122˚36'35"E.

The width between point 1 and point 2 is 0.5 mile; the width between point 2 and point 3 is 0.3 mile.

From N, steer for the E side of Middle Saponda in line with the W side of Pulau Saponda Selatan, bearing 169˚, which leads 5 miles E of Tanjung Nipanipa, which is steep and prominent. As soon as Pulau Bakori bears 250˚, course should be altered for the entrance to the N channel, passing not less than 0.1 mile NW of the beacon marking the N extremity of Sappa Djambi Bank.

In the narrow N passage leading to Teluk Kendari, keep in mid-channel to avoid the coastal reef extending from each side, passing between the beacon and lighted beacon marking each side.

When approaching the sharp bend by the flagstaff on the W side of Pulau Boengkoetoko, a blast on the siren or whistle should be sounded as it is impossible to see if a vessel is approaching from the opposite direction.

8.58 **Pulau Wowoni** (Wowoni) (4˚07'S., 123˚06'E.), a wooded island high in its SE part, is separated from the coast of Sulawesi by Selat Wowoni. The SE and W coasts are only sparsely inhabited, but there are several villages along its N coast. The NW coast is lower with a plain running some distance inland.

Tanjung Pamali, the N extremity of the island, is marked by a light. It is partly rocky and terminates in a shoal, with a least depth of 1.8m, extending about 0.5 mile offshore.

Tanjung Dongkalaja (Tanjung Dongkalaya), a low point covered with mangroves, lies 7.75 miles ESE of Tanjung Pamali. A prominent hill, 471m high, stands about 2 miles S of this point.

Vessels can take anchorage in the bight between Tanjung Pamali and Tanjung Dongkalaya.

Tanjung Watutembatu (Tanjung Watoetembatoe), a rocky point located 8.75 miles SE of Tanjung Dongkalaja, forms the E extremity of Pulau Wowoni and is marked by a light.

Vessels can take anchorage during the Northwest Monsoon off Dimba and Ladianta (Ladianti), two villages, situated close together about 3.75 miles NW of Tanjung Watutembatu.

Kiakia (Kekea), a village, is situated at the head of a small bay about 4.75 miles SW of Tanjung Watutembatu. Vessels can take anchorage off Kiakia, protected from the Northwest Monsoon.

Tanjung Wowoni, the S extremity of Pulau Wowoni, lying 12.5 miles SW of Tanjung Watutembatu, is rocky.

Vessels can take anchorage in the bight NE of Tanjung Wowoni.

A shoal, with a depth of 4.9m, lies close offshore from the head of the bight, about 3 miles NE of the point.

Taka Langgara (Taka Langara) (3˚59'S., 122˚59'E.), an extensive drying reef, lies about 2.5 miles W of Tanjung Pamali.

East Bank (Gosong Timor), located 1.5 miles SW of Taka Langgara, consists of several isolated patches with a least depth of 4m.

Middle Bank (Midden Bank) (Gosong Middle) (4˚00'S., 122˚54'E.), located about 7 miles W of Tanjung Pamali, is steep-to on all sides with a least reported depth of 4.5m.

West Bank (Gosong Barat) (4˚00'S., 122˚52'E.), located about 9.5 miles W of Tanjung Pamali, is steep-to with least depth of about 4.5m over its W end.

Selat Wowoni (Wowoni Strait) (4˚06'S., 122˚54'E.) is located between Pulau Wowoni and the Sulawesi coast. The strait is obstructed by reefs, especially on the E side of the S part which is unsafe for navigation. The reefs show poor discoloration.

Tidal currents have been reported to attain a rate of 3 knots.

Caution.—The beacons marking certain dangers in Selat Wowoni are not being maintained due to the mined area. The strait was reported to be closed to navigation.

A danger area exists in the N entrance of Selat Wowoni.

8.59 North Tjampada (Pulau Campada Utara) and South Tjampada (Pulau Campada Selatan) are two low, wooded islands lying 7 and 9 miles SSE, respectively, of **Tanjung Toro Pemali** (4˚03'S., 122˚50'E.). North Tjampada consists of two parts lying close together on a drying reef. These islands are surrounded by a very steep reef, narrow on the W sides.

Two Brothers (4˚08'S., 122˚53'E.) are two rocks, 15m high and covered with vegetation, lying on the coastal reef about 0.6 mile N of Pulau Campada Utara.

North Reef (Karang Utara) (4˚05'S., 122˚54'E.), a small reef with a least depth of 4.8m, lies in mid-channel of Selat Wowoni, about 3 miles NE of Two Brothers.

Ujung Curam (Tanjung Steile) (4˚14'S., 122˚55'E.), located on the Sulawesi coast about 2.75 miles S of South Tjampada, can readily be identified from N and S by the two rounded summits standing behind it.

Batu Tinggi (High Rock), lying about 1 mile S of Ujung Curam on the edge of the coastal reef, is a good landmark for navigating the strait.

Barat Tweeling (West Tweeling) (Karang Iris) (4˚13'S., 122˚55'E.), consisting of two coral heads about 0.1 mile apart with a least depth of 3.4m, lies in the fairway about 1.5 miles NNE of Ujung Curam.

The numerous dangers in the strait E of Barat Tweeling may best be seen on the chart.

Ujung Merah (Roode Hoek) (4˚20'S., 122˚54'E.), about 5.75 miles S of Ujung Curam, is a steep, bare, rocky cape of reddish color.

Directions.—Vessels proceeding from a position on the inner route should pass W of North Reef and steer SSE until the extremity of Ujung Merah is in range with the W side of Batu Tinggi, bearing 183˚. This range will lead close E of the beacon marking the reef SE of South Tjampada and about 0.1 mile W of the beacon marking Barat Tweeling. These reefs are generally discolored.

The passage between the Sulawesi coast, North Tjampada, and South Tjampada is safe and clear of dangers. Vessels should steer a mid-channel course in a least depth of 24m. The narrowest part of the channel at the N entrance is about 302m across. In the W Monsoon, violent squalls sometimes blow suddenly from the mountains of Sulawesi and may completely obscure the land. In such weather this channel is not recommended.

Approaching the S entrance of Selat Wowoni from eastward, Batu Tinggi should be steered for bearing N of 227˚ until the highest part of North Tjampada bears 339˚, then on the leading mark, bearing 183˚.

Tidal currents set N and S through Selat Wowoni, and may attain a rate of 3 knots. There is practically no period of slack water except at neap tides, and even then it is only of short duration.

Sulawesi—Southeast Coast—Off-lying Islands

8.60 Kepulauan Tukangbesi (Toekang Besi Islands) (Kepulauan Wakatohi) (5˚30'S., 123˚40'E.) are the SE group of islands belonging to Sulawesi, and consist of a great number of islands with many groups lying together on the same reef.

The Kepulauan Tukangbesi are surrounded by a steep-to reef, which generally shows good discoloration. Deep water exists between all the islands and atolls which make up the group. Some of the atolls can be seen from a great distance because of the clear, green discoloration marking the reefs.

Pulau Wangiwangi (Pulau Wangi Wangi) (5˚18'S., 123˚34'E.) is hilly and is fringed by a steep-to drying reef in the NW part of Kepulauan Tukangbesi. The reef is usually marked by discoloration when covered. Several islands lie on this reef, the largest being Pulau Kambode and Pulau Kampenaoene (Pulau Komponaone). Pulau Wangiwangi and Pulau Kambode are inhabited. Pulau Kampenaoene is low and mostly fringed with mangroves.

Pulau Timor and Pulau Soemanga, both mangrove-covered islands, lie on the reef between Pulau Kampenaoene and Pulau Wangiwangi. A drying reef lies 2 miles E of Pulau Timor; 4m and 6.5m patches lie 1 mile NNE of Pulau Timor.

A light, shown from a 21m white metal framework tower, marks the NW extremity of Pulau Wangiwangi.

Vessels with local knowledge can take anchorage in Teluk Wanji (Wandji Bay) (Wantji Baai), a bight formed between Pulau Wangiwangi and Pulau Kambode. Vessels anchor off the long stone pier extending across the coastal reef S of Mendati (Mandati) village in depths of 46 to 55m, coral. The depths are very irregular.

The tidal currents in Teluk Wanji run in a NW and SE direction. The rate seldom exceeds 0.5 knot. A rate of 2 to 3 knots has been observed at the anchorage when the coastal reef was uncovering, but this only lasted a short time.

Pulau Kaledupa (Pulau Kaledoepa) (Pulau Kaledoapa) (5˚32'S., 123˚46'E.), the largest and highest of a group of islands, is located about 7 miles SE of Pulau Wangiwangi.

This group consists of the islands of Pulau Kaledupa, mangrove-fringed and the only inhabited island, Pulau North Lintea, low, wooded, and mostly mangrove-fringed, off which there are three other low islets, and Pulau Hoga.

All the islands in the group lie on the same reef; the outer edge is steep-to.

Vessels with local knowledge can take anchorage W of an opening in the reef between Pulau Kaledupa and Pulau Hoga. A drying reef lies in the middle of the opening of the reef. The passage lies between the drying reef and the discoloring coastal reef of Pulau Hoga. The least depth in this passage, which narrows to 45m at the E end, is about 6.7m.

Vessels entering this opening in the reef will find good anchorage in a deep basin close inside in a depth of 26m.

A rock, which dries, lies about 0.45 mile E of the drying reef in the opening. A strong current sets through the opening in the reef.

8.61 Pulau Tomea (5˚45'S., 123˚56'E.), lying about 9 miles SE of Pulau Kaledupa, is high, wooded, and the fringing reef is steep-to.

Pulau Tolandono, lying on the SW side of the drying coastal reef around Pulau Tomea, is low, with steep sandy coasts, and a sandy beach near the SW extremity.

Pulau South Lintea, S of Pulau Tomea, is high and lies on the NE extremity of a large atoll. Pulau Tokobao, a sand cay covered with vegetation, lies on the NW extremity of the same atoll. There is a deep passage 10.4 mile wide between Pulau South Lintea and Pulau Tomea with a strong current running through it.

Vessels with local knowledge can take anchorage S of Oeskoe (Usku) Village on the S coast of Pulau Tomea in a depth of 33m. This anchorage lies midway between two shoals, with depths of 12.8m, lying 0.35 mile S of the pier and close to the coastal reef. There are several reefs, with depths of 3 to 4.8m, lying E and W of the 12.8m shoals.

Small vessels can take anchorage in a bight in the coastal reef about 0.5 mile N of Pulau Tolandono. A reef, with a depth of 2.1m and seldom marked by discoloration, lies in the middle of the bight.

Vessels with local knowledge can take anchorage under favorable conditions off the broad coastal reef extending from the NW coast of Pulau Tomea with the N extremity of Pulau Tomea, bearing 097˚, and the W side bearing 172˚, in a depth of 51m. Vessels must exercise caution because of the irregular edge of the coastal reef and some detached reefs, with depths of 3m, near it.

Pulau Binongko (5˚56'S., 124˚00'E.), consisting of raised coral terraces, lies in the SE part of Kepulauan Tukangbesi, 7.5 miles S of the E end of Pulau Tomea. The N part is higher than the S, and there is a depression between the two ends. The interior of the island is wasteland. Popalia, near the middle of the W coast, is the main village.

Vessels with local knowledge can take anchorage inside the barrier reef off the village of Palahidu (Palahidoe) on the N coast of the island. The entrance into the basin is about 91m wide, with a least depth of about 22m. Depths in the basin are about 29 to 37m.

8.62 Pulau Roendoema (Pulau Runduma) (5˚21'S., 124˚21'E.), the NE island of the Kepulauan Tukangbesi, is 32 miles NE of Pulau Tomea and lies with Pulau Anano on a long, narrow reef extending about 6 miles in a NW and SE direction. Pulau Roendoema is high, wooded, and inhabited.

Karang Roendoema (Karang Runduma) (5˚24'S., 124˚25'E.), located 4.5 miles SE of Pulau Roendoema, dries and is marked by discoloration when covered.

Karang Kapotta (5˚31'S., 123˚25'E.), a large atoll, lies about 8.5 miles SW of Pulau Kambode. The anchorage in Karang Kapotta is reached by one of the passages on the NW end of the reef. The northernmost entrance, with a least depth of 6.7m, is recommended.

Karang Kaledoepa (Kaledupa) (5˚45'S., 123˚41'E.), a large atoll, is located about 16 miles SE of Pulau Kambode. There are two entrances at the SE end with depths of 16m in the fairway.

A deep passage about 2 miles wide lies between Karang Kapotta and Karang Kaledoepa.

Karang Koka (6˚04'S., 124˚22'E.), an atoll, lies about 15 miles E of Pulau Binongko. It has three entrances, two on its S side and one on its NE side. The NE entrance, which has a least

depth of 5.5m in the fairway, is the best, but it should be marked by beacons before entering.

Moro Maho (6˚07'S., 124˚37'E.), located about 13 miles E of Karang Koka, is a thickly wooded sand bank on a drying reef. It is marked by a light.

Karang Koro Maha (5˚45'S., 124˚11'E.), an atoll about 9 miles E of Pulau Tomea, has two narrow entrances on the N side which are accessible only by small craft.

Pulau Ndaa (5˚39'S., 124˚03'E.) lies on the W side of a coral reef which dries, about 6.5 miles NE of Pulau Tomea. The islet is reported to be a radar target at 12 miles.

Pulau Kenti Ole (5˚43'S., 124˚29'E.), located 29 miles E of Pulau Tomea, is formed of raised coral and is reef-fringed.

Pulau Tjowo Tjowo (5˚48"S., 124˚20'E.), located about 20 miles E of Pulau Tomea, is similar to Pulau Kenti Ole.

8.63 Pulau Butung (Pulau Boeton) (Pulau Buton) (Pulau Boetoeng) (5˚00'S., 122˚54'E.), a large island located off the SE coast of Sulawesi, is separated from Kepulauan Tukangbesi by a deep passage.

The mountains of E Pulau Butung are not conspicuous and difficult to distinguish at a distance. On the S coast of the island the middle of three high spits of land is very conspicuous.

Tanjung Butung (Tanjung Buton) (Tanjung Boeton) (Tanjung Boetoeng), the N extremity of the island, lies about 7 miles S of the S extremity of Pulau Wowoni.

Tanjung Lakansai (Tanjung Lakantjai), a rocky point, lies about 8 miles SSE of Tanjung Butung. A conspicuous conical summit, 555m high, lies about 2.5 miles S of Tanjung Lakansai. This peak is very conspicuous from the N and S but loses its sharp character when some distance from the coast.

Teluk Lelamu (Lelamoe Baai) (4˚39'S., 123˚12'E.), 10 miles SSE of Tanjung Lakansai, is entered either N or S of Pulau Lelamoe (Lelamu), an islet lying across the entrance. This islet is mangrove-covered and fringed by a reef which dries. Teluk Lelamu has not been adequately surveyed.

Tanjung Goram (4˚52'S., 123˚12'E.) lies 13.5 miles S of Teluk Lelamu.

Telok Koro (Koro Baai) (4˚50'S., 123˚09'E.), is entered close W of Tanjung Goram. It can be entered without difficulty as far as the island at the head of the bay. A rock lies on the coastal reef near the SE point of Pulau Pombelaa.

Vessels with local knowledge can take anchorage in the bight W of Pulau Pombelaa. When approaching this anchorage vessels should exercise caution to avoid 2.2m and 5.4m reefs lying about 3 and 2.5 miles, respectively, S of **Latambera** (4˚50'S., 123˚00'E.). A reef, with a depth of 2.7m, lies about 1 mile S of the W point of Pulau Pombelaa. These reefs are only slightly marked by discoloration.

Laweloa Baai (Telok Kaloekoe) (Teluk Lawelu), 18 miles S of Latambera, is entered between **Tanjung Tomara** (5˚08'S., 123˚02'E.) and a point about 4 miles W. It is deep and clear of dangers except in the SE part, where the coastal reef extends up to 0.75 mile offshore. The SE side and head of the bay are fronted by mangroves.

Telok Kamaroe (Kamaru Bay) (5˚11'S., 123˚04'E.) is entered about 3.5 miles SE of Tanjung Tomara. A reef, with a depth of 1.3m, lies 0.13m outside the coastal reef on the W side of the entrance.

Vessels with local knowledge can take anchorage off Kamaroe (Kamaru), a village on the NW side of Telok Kamaroe in a depth of 55m.

The coastal reef, between Laweloa Baai and Telok Kamaroe, lies up to 2 miles offshore. The coastal reef between Telok Kamaroe and Tanjung Kasolanatombi (Tanjung Kassolanatoembi), 11 miles SE, is difficult to see after heavy rains due to muddy water.

Tanjung Kasolanatombi is marked by a light.

8.64 Pasarwadjo Bay (Wollowa Bay) (Teluk Pasarwadjo) (5˚28'S., 122˚53'E.) (World Port Index No. 52250), located in the middle of the SE coast of Pulau Butung, 23.5 miles SW of Tanjung Kasolanatoembi, is entered between Tanjung Laranka and Tanjung Kondowa, about 8.25 miles SW. Tanjung Kondawa is marked by a light. It is deep and clear of dangers. A good and sheltered anchorage is found in the SW part of the bay. A T-head pier, with a reported depth of 8.5m alongside, projects S from the shore in this part of the bay.

Vessels can take anchorage in a position ESE of the pier in a depth of 29m.

Teluk Sampolawa and **Teluk Nalandi** (5˚40'S., 122˚45'E.) are two bays formed between the three fairly high tongues of land extending from the S coast of Pulau Butung. A very conspicuous pyramidal hill, about 473m high, stands on the end of the middle tongue of land. The bays have considerable depths and the shores are steep-to.

Vessels with local knowledge can take anchorage in Teluk Sampolawa off the villages on the W shore, in depths of 33 to 49m. A bank of sand and mud, which dries, extends about 0.45 mile from the head of the bay.

Vessels with local knowledge can take anchorage at the head of Teluk Nalandi, close to the coastal reef, in a depth of 55m.

There are strong tidal currents along the S coast of Pulau Butung. Strong eddies are found off the three tongues of land. A circular current runs in the bays.

Pulau Hagedis (Pulau Batoeata) (6˚12'S., 122˚41'E.), about 30 miles S of Pulau Butung, is 193m high. The W and S sides are steep, the N more sloping, while the E consists of a long sandy point covered with coconut trees.

There are two villages and some scattered houses on the island. Except off the E point, the surrounding coastal reef is narrow and steep-to.

The only anchorage is in a bight on the N side of the island, where a ridge with depths of less than 18.3m, runs about 0.15 mile outside the coastal reef, enclosing a basin with depths of 37 to 44m. During the Northwest Monsoon, small vessels can cross the ridge and anchor in the basin. In the Southeast Monsoon, vessels lie better outside the ridge. The bottom is rocky and uneven. There is always the risk of losing the anchor.

A drying reef lies about 4 miles S of the E end of Pulau Hagedis.

8.65 Selat Butung (Buton Strait) (Boetoeng Strait) (Boeton Strait) (5˚00'S., 122˚45'E.), lying between the E coast of Pulau Muna and the W coast of Pulau Butung, is the usual coastal route taken by vessels proceeding to and from **Selat Selayar** (Straat Salajar) (5˚42'S., 120˚30'E.). The land on both sides is high and wooded.

Depths in the strait are very irregular. In North Narrows they vary from 37 to 91m. In the deep basin between North Narrows and South Narrows there are depths of over 366m, and in the S part of the strait, 18.3 to 92m.

Winds—Weather.—In the Southeast Monsoon, from June to September, the winds generally blow from SE with more or less force after 1000 and then become lighter after about 1600. In some parts of the strait, where the land is high on the Pulau Butung side, particularly in South Narrows, violent squalls occur. In June, July, and August storms and rains are sometimes experienced. In these months the air is clearer than usual, but in September the wind falls light with a dense haze over the whole strait. In September and October there is sometimes rain and squally weather over the N part, but fine at the same time in the S, the wind then blowing between NE and SE, occasionally extending to N and S. During the Northwest Monsoon, the winds vary between W and N, but there is little rain.

Tides—Currents.—In both entrances the tidal current sets into the strait during flood and out during ebb. There is practically no period of slack water. Due to the strong tidal currents striking the shores, whirlpools and eddies are found throughout South Narrows, and great care should be taken when passing through the strait. The tidal current sets towards the Pulau Muna shore. The rate of the tidal current in the wider part of the strait is 1 to 3 knots. The maximum rate, 5 knots at springs, occurs in South Narrows.

Selat Butung—North Part

8.66 The N coast of Pulau Butung, between Tanjung Butung and Pulau Labuan Blanda (Laboeang Belanda), 9.25 miles WSW, is very high and steep.

Pulau Labuan Blanda is a high, thickly wooded island. It is fringed by a reef extending about 0.2 mile from the N side of the island. Two above-water rocks lie on this part of the reef.

Vessels can take anchorage about 0.5 mile SW of Pulau Labuan Blanda in depths of 15 to 18m.

The E shore of the strait, between Pulau Labuan Blanda and **Tanjung Gornea** (4˚51'S., 122˚50'E.), is low with trees and mangroves growing to the water's edge. A small river discharges off Tanjung Gornea and discolored water extends for a considerable distance into the strait. Low and wooded, this part of the coast of Pulau Muna is fringed by a wide reef, and there are a number of detached reefs lying within 1.5 miles from the shore.

Raha (4˚51'S., 122˚44'E.) (World Port Index No. 52270), a large village, is an administrative center and shipping place for timber and forest products. The houses of Raha and a large galvanized roof are visible from a considerable distance.

A pier, with a flagstaff near its inner end, extends across the coastal reef from Raha.

A light is shown from a point 0.65 mile E of the pier.

There are several detached reefs in the roadstead. The outer reef, with a depth of 0.9m, lies 0.6 mile ESE of the pier.

Small vessels can take anchorage N of the detached reefs in a depth of 7m.

There is an oil jetty for the discharge of kerosene at Raha with a depth alongside of 5 to 6m. Vessels up to 1,200 dwt and 70m long can berth.

North Narrows (4˚56'S., 122˚48'E.), on the E shore, is high and densely wooded. Pulau Bakealo (Pulau Puning) and Pulau Munante (Lebutan Island), marked by a light on its W side, are low and wooded. Pulau Lebutan is fringed by a reef with a high rock on its NW side. Pulau Kaholipana (Pulau Kaholifana) is covered with tall trees and can be seen at a great distance because of the bare white trunks of dead trees.

The W shore of North Narrows is high and steep.

Anchorage can be taken in Teluk Lohia (Lohia Bay) immediately NW of **Tanjung Haai** (Haai Point) (4˚54'S., 122˚46'E.). A shoal, with a depth of 5.5m, lies about 0.2 mile NE of Tanjung Haai. Pulau Lima (Lima Islands) consists of six large rocks lying about 1 mile SE of Tanjung Haai. Two of the rocks are covered with vegetation and appear as one islet when seen from the N or S. Pulau Dua (Dua Islands), two islets, lie on a detached reef with a least depth of 0.9m, in a position about 1.5 miles SE of Tanjung Haai. Karang Banka (Banka Reef), with a depth of 4.9m, lies about 2.25 miles SE of Tanjung Haai. Karang Bali (Bali Reef), with a depth of 4.5m, lies about 3 miles SSE of the same point. A reef, with a depth of 10m, lies about 0.5 mile ENE of Karang Bali.

Strait Between North Narrows and South Narrows

8.67 **Tanjung Tampunabale** (Tanjong Tampenan Bale) (5˚03'S., 122˚45'E.), the extremity of the low spit of land on the E shore, is fringed by a coastal reef which usually discolors.

Vessels can take anchorage off this cape in depths of 14.6 to 18m.

Gosong Kulaga, lying about 2.5 miles SSW of Tanjung Tampunabale, consists of several sand bars and rocks which discolor when submerged. Two sand bars, which dry, lie at the S end of this shoal. Due to their color, these sandbars are visible for some distance.

A conspicuous round-topped tree stands on the side of a sloping hill, about 2 miles N of Tanjung Umbulu Suan (Tanjung Kambolosua), and is visible from S. The coast N of Tanjung Kambolosua is high and steep.

Pulau Pendek (Pendek Island) (5˚13'S., 122˚44'E.) and Pulau Pegate (Pulau Panjang), about 1.75 miles SSW, are both low and wooded islands.

The W shore of the basin between **Tanjung Leibora** (4˚59'S., 122˚46'E.) and Tanjung Kemba, about 19 miles SSW, is high and steep.

Teluk Kemba (Kemba Bay) (5˚15'S., 122˚37'E.), entered between Tanjung Mata Ajer (Tanjung Matanuwe) and Tanjung Kemba, about 4 miles S, indents the coast about 3 miles. A conspicuous wooded hill, well defined against the bare background, stands 4.75 miles NNW of Tanjung Mata Ajer, and is plainly visible from N or S.

South Narrows (5˚21'S., 122˚39'E.), on the E shore between Tanjung Kalankangan and Tanjung Papremkama, about 4.5 miles SSW, is high and steep. Batu Sori, composed of yellow sandstone, lies close S of Tanjung Batu Sori about 0.75 mile S of Tanjung Kalankangan.

Pulau Batu Kapal, abreast of Tanjung Kalankangan, is steep with a flagstaff on it.

Batu Sori Light (5˚20.9'S., 122˚39.7'E.) is shown from a height of 25m.

The coast between Tanjung Papremkama and Tanjung Kaubula (Tanjung Koubula), about 3.25 miles SSW, forms a large circular bay in which lies Pulau MaKassar (Makasser Island). The island is heavily wooded in the S half.

Tanjung Barutu (5˚22'S., 122˚38'E.), located on the W side of the narrows, is a low, wooded point sharply defined when seen against the opposite shore. The coast N of this point is high and steep. Tanjung Kalandria, about 1.5 miles SW of Tanjung Barutu, is low and wooded. A reef extends about 0.4 mile SW from the point. Vessels can take anchorage off this point in a depth of 18.3m.

The coast between **Tanjung Baru Baru Koma** (5˚25'S., 122˚36'E.) and Tanjung Pangela, about 2 miles SSW, is low with a reef extending about 0.5 mile offshore.

8.68 Buton (Baubau) (Boetoeng) (5˚28'S., 122˚37'E.) (World Port Index No. 52260), the most important town in Selat Butung, is situated about 0.5 mile E of Tanjung Kaubula. A stone breakwater is built over the coastal reef. There are several small piers, including a concrete and wooden wharf, 28m long, with a depth alongside of 4m.

There is a jetty for the handling of oil products with a depth alongside of 6m. Vessels between 1,200 dwt and 6,000 dwt and a length of 70 to 120m can berth.

The old palace and prominent white mosque with a flagstaff stand about 1 mile S of Baubau.

The coastal reef fronting Baubau was reported to be extending.

In the outer roadstead the current sets in the direction of the strait. Close inshore there is a counter-current setting almost parallel to the shore, and between these there is an area of irregular currents.

Vessels can take anchorage E of the mouth of Kali Baubau, about 0.5 mile E of Tanjung Kaubula, in depths of 12 to 45m. Due to the variable nature of the currents, vessels should moor to avoid collision when swinging at slack water.

A swept channel 0.5 mile wide, joined by the following positions, leads from the South Narrows to the S entrance of Selat Butung:

1. 5˚26'35"S, 122˚36'22"E.
2. 5˚23'51"S, 122˚37'16"E.
3. 5˚21'52"S, 122˚38'22"E.

Directions.—Vessels coming from the N should approach the North Narrows with the E point of Pulau Kaholifana in range with **Mount Lambolo** (5˚05'S., 122˚48'E.), bearing 178˚. This course leads E of **Karang Banka** (4˚55'S., 122˚47'E.). After passing Karang Banka, alter course to 200˚ passing midway between Pulau Kaholifana and the Muna coast. When the S side of Pulau Kaholifana bears 090˚, change course to 225˚ until Tanjung Tampunabale is in range with Lombolo, bearing 100˚.

A course of 194˚, with the center peak of **Three Hills** (4˚57'S., 122˚45'E.) bearing 014˚ astern, will lead through the strait between North and South Narrows.

Vessels transiting the South Narrows from N should run it keeping in mid-channel until the point of land SE of Tanjung Papremkama shows clear of the latter, then alter course to 187˚ with the mosque and flagstaff S of Baubau on that bearing.

When the middle of Pulau Makassar bears 066˚, alter course to 246˚.

8.69 Selat Masirir (Massiri Strait) (5˚35'S., 122˚33'E.) separates Pulau Kadatuang (Pulau Kadatoeang), Pulau Lewutokidi (Lewoeto Kidi), and Pulau Siumpu (Pulau Sioempoe) on the W side from the SW side of Pulau Butung.

The strait is deep and clear of dangers except for a small reef, generally marked by discoloration, with a depth of 0.3m, lying about midway between the NE extremity of Pulau Kadatuang and Pulau Butung.

Pulau Siumpu (Pulau Sioempoe) (5˚40'S., 122˚30'E.) has a flat summit, 290m high, near its center from which a long spur runs SW, with a hill on the outer end appearing as a separate island from a distance. Batu Popalia, a group of rocks partly above water, lie off Tanjung Massiga which is marked by a light and is the SW extremity of Pulau Siumpu. Passina Tongali, with a depth of 4.5m, lies 1 mile SW of Tanjung Tolando, the NW extremity of Pulau Siumpu, and is not marked by discoloration.

Vessels can take anchorage off Tanjung Tolando, in a depth of 44m.

Pulau Lewutokidi (Lewoeto Kidi) (5˚36'S., 122˚30'E.), located about 1.5 miles N of Pulau Siumpu, has a small hill in the middle of the island. The NE part of the island is low and covered with grass and trees.

Pulau Kadatuang (Pulau Kadatoeang) (5˚33'S., 122˚30'E.), located about 1.75 miles N of Pulau Lewutokidi, is high and marked on its NE extremity by a light.

Vessels can take anchorage off the W coast of Pulau Kadatuang in a position W of the N of two detached rocks on the coastal reef, in depths of 40 to 46m. This area lies only 0.4 mile from the charted 183m curve.

Vessels can also anchor off the E coast of Pulau Kadatuang about 2 miles S of Banapungi (Banabungi), the NE point of the island, in a depth of 12.8m.

8.70 Pulau Muna (Muna Island) (5˚00'S., 122˚30'E.), lying W of Pulau Butung and forming the W side of Selat Butung, is generally low except in its SE extremity and is covered with forest. The W and N coasts are generally covered with mangroves. The S part of its W coast and the E coast are inhabited.

The S coast of Pulau Muna is indented by three bays.

Teluk Wambololi (Wambololi Bay) (5˚23'S., 122˚23'E.), the W of these bays, is shoal and of little use except for small craft.

Vessels with local knowledge can take anchorage in the outer part of Teluk Wambololi in depths over 37m. The reefs in the inner part of the bay do not show up well because of the reddish-brown color of the water.

Teluk Lasongko (Lasongko Bay) (5˚23'S., 122˚31'E.), the middle bay, is obstructed by a rocky reef, with depths of 4.6 to 6.7m, lying between the entrance points. Inside the bay there are depths of 18 to 22m in the fairway extending nearly 5 miles towards the head.

Karang Kaunto, rock covered with vegetation, lies on the coastal reef on the W side of the bay, about 4 miles NNE of **Tanjong Inulu** (5˚24'S., 122˚28'E.). Two smaller rocks lie under 0.45 mile N of Karang Kaunto. The barrier reef can be crossed with the W of these two rocks showing between Karang Kaunto and the W shore of the bay. The greatest depth is found with the E rock in range with the W side of Karang

Kaunto, bearing 004°. This range leads very close E of a 4.6m patch on the reef at the entrance.

Teluk Nambo (Nambo Bay) (5°25'S., 122°34'E.), the E part of the three bays, affords good anchorage.

Selat Tiworo (Tioro Strait) (4°33'S., 122°30'E.) lies between the N coast of Pulau Muna and the coast of Sulawesi. It is an area of countless islands, reefs, and rocks. The reefs and rocks are steep-to and discolored. All the islands are low except Groot Tobea, the largest of Kepulauan Tobea in the E entrance to the strait, and the majority of the islands in the S entrance. Kepulauan Tobea divides the E entrance of Selat Tiworo into two parts, all of which lie on a drying reef.

The N coast of Pulau Muna between **Tanjung Tiworo** (4°45'S., 122°23'E.) and Tanjung Lambiko, the NE extremity of the island, about 22.5 miles ENE, is mangrove-covered and practically uninhabited. Due to the numerous reefs, the coast between Tanjung Tiworo and Tanjung Bakuku (Tanjung Bakoekoe), about 15 miles NE, should not be approached.

8.71 **Pulau Tembako** (4°54'S., 122°03'E.) (World Port Index No. 52280), located about 0.75 mile E of Tanjung Pandan, is separated from the mainland by a clear channel, with a least depth of 8.5m in the fairway.

Vessels can take anchorage in the channel between Pulau Tembako and the mainland.

There is a village on the W side of the island, and a collecting place for forest products with a small wooden pier on the N point. Laora, a village, lies on the Sulawesi shore N of Pulau Tembako.

Batu Mandi, a rock 5m high, lies about 1 mile SE of Pulau Tembako.

Little is known concerning the currents in Selat Tiworo other than they run either W and S or N and E. In Teluk Lahia (Laea Bay), just within the E entrance and in the passages on either side of Kepulauan Tobea, there is sometimes a tidal current for 24 hours in one direction. The maximum velocity is about 2 knots except possibly in the narrower passages.

The N part of the W coast of Pulau Muna between **Tanjung Nabottiebitte** (5°03'S., 122°23'E.) and Tanjung Mapauti (Tanjung Mapanti), about 16 miles N, is covered with mangroves and uninhabited. Numerous reefs and rocks front this stretch of coast extending up to 16 miles offshore.

The coast between Tanjung Mapauti and Tanjung Tiworo, about 6 miles NE, is low and mangrove-covered. Kepulauan Tiworo, composed of several islands and reefs, extends about 11 miles N from Tanjung Tiworo.

Vessels without local knowledge should not attempt to proceed through Selat Tiworo. Vessels are cautioned that navigational aids in Selat Tiworo may be damaged or missing.

A danger area blocks the entrance of Selat Tiworo in the vicinity of Groot Tobea. Another danger area exists about 25 miles W of Groot Tobea.

8.72 **Pulau Kabaena** (5°17'S., 121°55'E.) is a steep mountainous island, lying about 13 miles W of Pulau Muna. Gunung Sambapolulu (Sabanpololu), the highest peak, stands in the middle of the island. It appears as a cone from the S, and as a round summit with a cleft from the W. The NW part of the island is low. Gunung Batusangia, 6 miles NW of Guning Sambapolulu, is a very conspicuous mountain with five peaks, but only 2 or 3 are visible.

Tanjung Koku (Tanjung Kokoe) (5°30'S., 121°57'E.), the S extremity of Pulau Kabaena, is a low promontory from which the coastal reef extends 0.6 mile. The S half of the W coast, as far N as **Tanjung Malate** (5°17'S., 121°48'E.), is fronted by a ridge of reefs lying from 1 to 3 miles offshore.

Pulau Sagori (Pulau Sogori), an inhabited island about 4 miles SSW of Tanjung Malate, lies on the N end of a large atoll-shaped reef. A large area of the reef dries. The lagoon can be safely entered through a passage on the E side over a depth of 5.8m. The reef is marked by clear green discoloration when covered.

Pulau Mataha, a low flat island, lies near the S end of the drying reef fronting the N part of the W coast of Pulau Kabaena, and 1 mile W of Tanjung Malate. This reef extends between 0.5 mile and 1.75 miles offshore.

Vessels with local knowledge can take anchorage in **Teluk Pising** (Pising Bay) (5°05'S., 121°56'E.) located on the N coast of Pulau Kabaena. The W side of the bay is foul.

Teluk Lingora (Lingora Bay), located on the NE side of the island, is clear of dangers in the S part outside the 20m curve. The N part of the bay is reported to contain a few reefs.

Passi Pandolangi, a sand bank with drying rocks, lies about 4 miles offshore NE of Teluk Lingora.

Pulau Dahudahu (5°13'S., 122°05'E.), a small islet, is separated from Pulau Kabaena by a deep channel about 0.15 mile wide. On the W side there is a 5.8m patch.

Teluk Tallabassi (5°15'S., 122°04'E.), located close S of Tanjung Tallabassi, a very steep point, has in its S part Pulau Damalawa-Besar, 290m high. A shoal, with a depth of 0.9m, lies about 0.75 mile SSE of Tanjung Tallabassi.

Vessels with local knowledge can take anchorage in Teluk Tallabassi, in a depth of 16.4m.

Pulau Damalawa Besar is separated from Pulau Kabaena by a channel with a depth of 4.6m. Care should be taken to avoid the 2.7m patch lying in the middle of the S entrance.

Pulau Damalawa Ketjil, located about 0.75 mile S of Pulau Damalawa Besar, is separated from the coastal reef extending from Pulau Kabaena by a narrow channel, with depths of 7.6m.

Pulau Telaga Besar and Pulau Telaga Ketjil lie off the S coast of Pulau Kabaena and are separated from it by a clear channel with depths of 10.3 to 21.9m in mid-channel. Pulau Telaga Besar is low on the W side, but rises to a plateau of 148m in the E part. A rock, which dries, lies 0.6 mile W of the extremity of the island. Pulau Telaga Ketjil is 138m high and has a small village on the NW side.

Vessels can take anchorage off the N coast of Pulau Telaga Ketjil in a depth of 49m.

8.73 **Selat Muna** (5°15'S., 122°08'E.), the S approach to Selat Tiworo, lies between the E coast of Pulau Kabaena and the S part of the W coast of Pulau Muna.

The E half of the N part of the strait is encumbered with reefs and shoals. Navigation in this area is not advised except with local knowledge. The flood current sets N and the ebb S through the strait, but seldom exceed 2 knots.

Selat Poleang (4°58'S., 121°57'E.), the W approach to Selat Tiworo, is bounded on the S side by the N coast of Pulau Kabaena and on the N side by the Sulawesi coast.

The strait is clear of dangers except for a large reef of sand and stones, with a least depth of 10m, lying in the middle of the strait, about 4 miles N of **Tanjung Magina** (5˚04'S., 121˚58'E.). The flood current sets E and the ebb W through the strait.

Pulau Pasudu (4˚55'S., 121˚57'E.), located S of Pelabuhan Lemmu, can be recognized from a great distance by a large tree projecting above the shrubs which cover the islet.

A channel clear of dangers, with a depth of 10.9m, lies between the reef fringing Pulau Pasudu and the reef extending 1.25 miles from the mainland.

8.74 Teluk Bone (Golf Van Bone) (4˚00'S., 120˚45'E.), separating the two S peninsulas of Sulawesi, is entered between **Tanjung Boengikalo** (Tanjung Bugingkalo) (4˚51'S., 121˚41'E.) and Tanjung Lassa, about 87 miles WSW. Numerous reefs lie within the 183m curve off the S part of the W shore.

The E coast of Teluk Bone is sparsely inhabited and backed by wooded mountains. The head of the bay is low and fringed by mangroves. There are several wooded hills standing inland. The area is sparsely populated except at its extreme head. The W coast is densely populated and generally low.

Winds—Weather.—The following particulars of winds and weather were gathered from observation made during the survey of Teluk Bone.

In the S part of the W side, from February to April, rain and showers occurred for 28 out of 78 days observations.

The sky was always cloudy, especially in the daytime. The clouds came up with the sea wind in the forenoon, packed in dark masses against **Gunung Lompobatang** (5˚22'S., 119˚56'E.), and burst into rain in the afternoon.

Farther N during December and January, the wind was mostly W and NW, quickly raising a troubled sea in the daytime. At the head of Teluk Bone, during July, the wind was weaker and the sea calm.

On the E side of Teluk Bone there appears to be a quite a bit of rain during the Southeast Monsoon. At the end of April and during May, at the entrance to Teluk Bone, the Southeast Monsoon blew freshly, with squalls, much rain, swells, and seas. Farther N the wind was less, but the rain greater. June and July were very unsettled with winds from the SE, but sometimes blowing from W for several days. In August, the rain gradually ceased and the weather became more settled.

Tides—Currents.—Tidal currents in Teluk Bone seem to be very insignificant and weak, except at the mouths of the large rivers. The direction of the current S of Teluk Bone is in accordance with the monsoons, being W from June to October and E from December to May.

All the reefs, which dry, lying near the 183m curve are well marked by discoloration and often break in the Southeast Monsoon.

A local magnetic anomaly has been reported off **Teluk Bone** (4˚00'S., 120˚45'E.), 14 miles W of **Tanjung Lassa** (5˚37'S., 120˚29'E.).

8.75 Tanjung Boengikalo (4˚51'S., 121˚41'E.), the E entrance point of the bay, is low and rounded with some scattered tall trees. A detached drying reef with irregular depths and well marked by discoloration, lies 1.25 miles S of the point. The coastal reef projects 2 miles SW of the point. A small shoal, with a depth 4.1m, lies about 5 miles ESE of Tanjung Boengikalo. The coast forms a wide bight with irregular depths E of the point.

The E coast of Teluk Bone between Tanjung Boengikalo and Tanjung Ponopono, about 16.5 miles NW, is fronted by a wide, drying coastal reef. The reef is discolored for about 5 miles NW of Tanjung Boengikalo.

Karang Sopang (Sopang), a small, dangerous steep-to reef with a depth of 0.9m, lies outside the 183m curve about 9 miles WSW of Tanjung Boengikalo. The reef is marked by discoloration and a heavy surf.

Teluk Paria (4˚48'S., 121˚38'E.), located about 5 miles NW of Tanjung Boengikalo, is 0.3 mile wide between the coastal reefs on either side of the entrance.

Vessels of moderate size can take anchorage in Teluk Paria, in depths of 14.6 to 29m, sand.

Vessels entering the bay should keep fairly close to the W entrance point, which is covered with mangroves. The coastal reef SW of this point is dangerous and it frequently shows very poor discoloration, as the water is very muddy.

Pulau Basa (4˚50'S., 121˚30'E.) is a small, low, and thickly-wooded island lying about 10.5 miles W of Tanjung Boengikalo on the N end of a large drying reef. This reef extends about 2 miles SE, 1.5 miles W, and 0.3 mile N.

Karang Boisebola, about 2 miles NW of Pulau Basa, is steep-to and dries in several places.

Karang Lamoeloe (Lamulu), about 1 mile NW of Karang Boisebola, is a very steep reef with a white sand cay in its N part, which dries 1.8m at lowest tide.

The coast between Tanjung Ponopono and Tanjung Pakar, 27 miles N, is hilly and fringed by a reef which dries, extending 0.75 mile offshore in the vicinity of Tanjung Tanggetada, about 6 miles S of Tanjung Pakar.

A number of small reefs, with a depth of 1 to 9m, lie within the 183m curve at distances of 1 to 3 miles offshore. Three drying reefs lie within 2 miles of the coast and 4.5 miles N of Tanjung Towari. To the S of these reefs, a small white sand cay plainly shows at low water.

The mouth of the Kali Oko Oko, which is a landing place for timber, lies about 3 miles N of Tanjung Tangkedata. Depths of less than 1.5m extend 1 mile seaward from the river mouth. Shoals, with depths of 4.1m and 6m lie about 3 miles WNW and NNW, respectively, of the river mouth.

Vessels with local knowledge can take anchorage on the southside of the small bay immediately N of Tanjung Towari in a depth of 37m, mud. This anchorage is 0.1 mile from the coastal reef with Tanjung Towari, bearing 199˚. Vessels with local knowledge can also take anchorage close N of the mouth of the Sungai Towari, located about 1.25 miles N of Tanjung Towari, in a depth of 20m, mud, with Tanjung Towari, bearing 175˚.

8.76 Teluk Mekongga (Bingkoka Bay) (4˚08'S., 121˚30'E.) is entered between Tanjung Pakar and Tanjung Konaweha, about 19 miles NW. The S part of the bay is practically inaccessible because of the numerous reefs and shoals. Several islands lie across the entrance.

An area off Tanjung Pakar was swept to 11.4m. An anchorage lies at the NE end of this area. Reefs, with depths of

less than 2m, lie close to all but the SW side of the area; all are marked by beacons.

Pulau Padamarang (4˚07'S., 121˚25'E.), the largest of the islands in the middle of the entrance to Teluk Mekongga, is rugged and mountainous with numerous small bays. The highest summit, near the center of the island, rises to a height of 702m. The island is generally surrounded by a steep-to reef. The W side is clear except off the points.

Pulau Lima, a small islet about 72m high, lies on the reef which extends 0.5 mile from the SW point. A bare rock lies on the reef projecting from the SE point of the island. Pulau Idju lies close off the N extremity. Pulau Lemo lies 0.35 mile off the E point of Pulau Padamarang, and is fringed by a drying reef. The passage between Pulau Lemo and Pulau Padamarang is deep, narrow, and not recommended because of the strong current. Karang Padamarang, about 1.5 miles NNW of Pulau Idju, is a round coral reef of about 0.2 mile diameter and dry at LW.

8.77 Pulau Lambasina-Besar (4˚05'S., 121˚21'E.), a high island with two summits forming a saddle, lies about 0.5 mile from the NW extremity of Pulau Padamarang.

The NW peak is 321m high. The island is surrounded by a coastal reef, except on the SW side. The reef projects about 0.7 mile from the N point in a sharp spit, with deep water immediately outside. The passage between this island and Pulau Padamarang is almost closed.

Pulau Lambasina-Ketjil, a low island, lies about 1 mile W of Pulau Lambasina-Besar. A light is shown at a height of 60m from the SW point of the island. The highest summit, 99m high, stands in the SW part of the island. The passage between the Kepulauan Lambasina is about 0.9 mile wide and clear in mid-channel.

Pulau Maniang (4˚12'S., 121˚29'E.), 222m high, lies 3 miles NW of Tanjung Pakar. Pulau Buija and Pulau Limaei are connected to the N side of Pulau Maniang by a drying reef. Numerous shoals lie between Pulau Maniang and the coast SE.

Pomalaa (4˚10'S., 121˚36'E.) (World Port Index No. 52295), a large trading village, is situated about 6 miles NE of Tanjung Pakar. There is a pier of concrete construction, providing alongside berths for vessels not more than 135m long, with a draft of 5m at the NE side and 7m at the SW side. A conspicuous chimney, 45m high, stands 1 mile S of Pomalaa. Pomalaa is also an anchorage port for the export of Nickel Ore.

Pilotage.—Pilotage is not compulsory. However, due to uncleared waters, it is advisable that vessels calling for the first time at Pomalaa use a pilot. A tug meets vessels 1.5m W of Tanjung Pakar where officials board and the tug leads vessels to the anchorage.

Anchorage.—Anchorage may be taken by vessels with local knowledge off Pomalaa

8.78 Kolaka (4˚03'S., 121˚35'E.), a large village and collecting point for forest products, stands at the head of Teluk Mekongga. A stone pier, about 0.2 mile long, with a depth of 0.9m at its head, is situated off the village.

Kolak Light (4˚03.2'S., 121˚36.4'E.) is shown 1 mile E of the village.

There is a jetty for handling oil products with a depth of 8m. Vessels up to 6,000 dwt and 120m long can berth.

Vessels with local knowledge can take anchorage about 0.5 mile SW of the pier at Kolaka, in a depth of 29m.

Karang Kolaka lies N of the anchorage off Kolaka, about 0.5 mile offshore, and is about 0.3 mile long and 0.1 mile wide, drying in parts.

A dangerous reef lies about midway between Karang Kolaka and the shore E at Kolaka.

Directions.—Vessels approaching Teluk Mekongga from the S should steer 000˚ for the summit of Pulau Padamarang, passing outside of all dangers. Steer for Palau Lambasina-Besar when sighted, and later the SW summit of Palau Lambasina Ketjil, taking care to keep the latter bearing N of 332˚. Then pass in mid-channel between these two islands, making good a course of 034˚.

When the N point of Pulau Lambasina Ketjil bears 250˚, the beacon on Karang Padamarang may be steered for, leaving it to port, then change course to pass between Karang Mekongga, located about 1.75 miles WSW of Kolaka, and Karang Kolaka. The SE summit of Palau Lambasina-Besar in range, bearing 262˚, with the sharp hillock on the NE slope of the NW summit of Pulau Padamarang, leads between these two reefs.

Vessels approaching from W should steer 090˚ for the summit of Pulau Padamarang to pass well clear of Karang Rosa Marie, located about 10.25 miles W of Pulau Lambasina Ketjil. There is a depth of only a few meters over this reef, which breaks heavily. Karang Tamboli lies about 5 miles NW of Karang Rosa Marie. The reef dries and is plainly visible because of the surf. Shoal water, with a patch that nearly dries, extends about 1 mile to the S.

8.79 Tanjung Ladongi (3˚55'S., 121˚15'E.), located 22 miles NW of Koloka, is steep and conspicuous from the W. Pulau Tjampea lies about 1 mile W of this point.

Teluk Paopao (Paopao Bay), located close SE of Tanjung Ladongi, is open to SW and S seas. A steep coastal reef extends about 0.4 mile from the E shore of the bay. A shoal, with a depth of 0.3m, lies in the NW part of the bay, about 0.4 mile offshore. Vessels with local knowledge can take anchorage on the E side of Teluk Paopao.

Lariko Bay (Teluk Woimenda) (3˚51'S., 121˚14'E.) is entered between Tanjung Waminda, lying 3.25 miles N of Tanjung Ladongi, and Tanjung Lariko, about 4 miles NW.

Pulau Laburoko (Laboeroko), 122m high, lies about 0.5 mile W of Tanjung Waminda. The shores of the bay are edged by a narrow steep-to reef.

Vessels with local knowledge can take anchorage in the S part of Teluk Waminda, in a depth of 37m.

Karang Dungi (Dungi Reefs) (Doengi Riffen) (3˚57'S., 121˚06'E.) are two small shoals visible a considerable distance under favorable circumstances.

The reefs lie just within the 183m curve, about 8.5 miles W of Tanjung Ladongi. The NW reef has a depth of 1.5m and the SE, a depth of 0.3m. The ridge between the two reefs has a least depth of 16m.

The westernmost reef lies about 10.5 miles WSW of Tanjung Lariko. The reef is narrow, semicircular with the opening to the E, and partly dries.

The coast between Tanjung Batoe Laki, located about 6.5 miles NW of Tanjung Lariko, and Tanjung Toli Toli, about 18 miles NW, is fringed by a ridge of drying coral reefs extending up to 4 miles offshore.

Teluk Labuandata, a small bay located about 2 miles S of **Tanjung Tabako** (3˚25'S., 120˚52'E.), provides good anchorage in a depth of 37m for a single ship.

Teluk Bone—West Coast—Tanjung Lassa to Tanjung Jene

8.80 From **Tanjung Lassa** (5˚37'S., 120˚29'E.), the SW entrance point of Teluk Bone, the coast trends in a N direction 142 miles to Tanjung Jene. This coast is densely populated, generally low, and in its central part there are large areas of paddy fields.

Tanjung Laboe (Tanjung Labu) (5˚22'S., 120˚25'E.) is a high point that is prominent due to its white rock formation, located 17.5 miles NNW of Tanjung Lassa.

The coast in this area is high, steep, and can be approached closely, but there is no safe anchorage.

Kadjang (Kajang), an administrative headquarters, is situated in a small bight about 3 miles WNW of Tanjung Laboe.

There is a stone pier on the S side of the bight, but the bottom is too steep for anchoring. The most suitable anchorage is in the NW corner of the bight in not less than 27m, NNW of the stone pier.

Between Tanjung Laboe and Tanjung Tippoeloewe (Tanjung Tippuluwe), 52 miles N, the charted 183m curve turns 31 miles NE to **Karang Limpogeh** (4˚56'S., 120˚45'E.), marked by a light, on which there is a sand cay. This reef is noticeable, but the sand cay only shows over a small part at HW. From this reef the charted 183m curve turns NW for a distance of 32.5 miles to a position 4 miles E of Tanjung Tippoeloewe, enclosing some islands and a large foul ground, which is steep-to on its outer edge.

A shoal, with a depth of 6.7m, has been reported to lie about 3.5 miles SE of Karang Limpogeh.

Between Tanjung Laboe and Tanjung Kopang, 10 miles NNW, the coast rises steeply to hills about 122m high, then begins a stretch of low land to Tanjung Ancu (Tanjung Antjoe), about 9 miles farther N.

Gunung Sinjai (Gunung Sindjai) (5˚05'S., 120˚12'E.) rises to a height of 263m, 6 miles SW of Tanjung Ancu. This peak is the only good landmark along this part of the coast.

Karang Melambiri (Melambiri) (5˚14'S., 120˚26'E.), a drying reef that is steep-to on its E side, lies 5.5 miles NNE of Tanjung Laboe. A 7m patch lies close S of Karang Melambiri. Karang Malamala (Malamala), a reef which partly dries, lies 1.75 miles W of Karang Melambiri.

Pulau Bulunrue (Boeloenroee) (5˚07'S., 120˚24'E.), 7 miles NW of Karang Malamala, is a conspicuous island that rises to a height of 252m. A reef which dries, lies 2 miles S of Pulau Bulunrue and is marked by a beacon.

Another reef, with a depth of 5.5m, lies 3 miles SW of Pulau Bulunrue. An island about 4.5 miles NNE of Pulau Bulunrue appears as a saddle when seen from the N or S.

Caution.—There are a great number of shoals and reefs in this vicinity, and it is advisable to use the greatest care in navigating here.

8.81 **Sindjai** (Sinjai) (5˚08'S., 120˚15'E.), an administrative center, is situated on Sungai Sindjai, 2 miles within its entrance, about 6 miles SSW of Tanjung Ancu. There is good anchorage in a depth of 20.1m with the mouth of a river, 2.5 miles NE of Sindjai, bearing 292˚, at least 1 mile offshore. Anchorage may be taken closer in off the mouth of the river in not less than 9.1m.

The bank off the river mouth is steep-to and deep draft vessels should not approach inside the 20m curve.

To approach the anchorage from the S, vessels when abeam Tanjung Laboe, about 1 mile distant, make good course 354˚ for Pulau Bulunrue.

When about 3 miles S of Pulau Bulunrue, steer for the anchorage with Gunung Sindjai bearing 297˚. Anchor when Pulau Beloppo, 1 mile NE of Tanjung Ancu, bears 006˚ and the river mouth bears 292˚.

Tanjung Salangketo (4˚50'S., 120˚23'E.) lies 13.5 miles N of Tanjung Ancu, and Tanjung Patiro lies 12 miles farther NNE. Gunung Meru (Meroe) rises to a height of 199m, 2 miles inland, about 7 miles NNW of Tanjung Ancu and Gunung Pacongi (Patjongi) rises to a height of 749m, 8 miles NW of Gunung Meru.

From the mouth of Sungai Sindjai to Tanjung Ancu there is a low strip of marshy land, 1 mile wide along the coast. From Tanjung Ancu to a position on the coast E of Gunung Meru, the coast becomes undulating.

From this point to Tanjung Patiro, there is a wide plain along the coast. The land within rises to spurs from isolated summits. Gunung Cinnung (Tjinnoeng), 256m high with a flat summit, rises 7 miles WSW of Tanjung Patiro and Gunung Damara (Damara), 152m high, conical, covered with tall trees, lies 3.5 miles WNW of Tanjung Patiro.

The coast, between Tanjung Ancu and Tanjung Patiro, is edged by a broad drying reef covered with a layer of mud. A small rocky islet lies on the reef 5.5 miles N of Tanjung Ancu.

Between Tanjung Patiro and Tanjung Tippoeloewe, 11 miles NNW, the coastal appearance changes considerably.

There are large villages with coconut groves interspersed with vast stretches of cultivated land.

8.82 **Badioa** (Bajowe) (Bajoa) (4˚33'S., 120˚23'E.), a town about 7.5 miles NNW of Tanjung Patiro, has a pier which dries at low water. The roadstead within the 10m line, about 3 miles offshore, is thickly studded with coral heads.

Totopele Light (4˚32'S., 120˚28'E.) is shown from the reef about 4 miles ENE of the pier.

Reefs, with a least depth of 0.9m, lie about 4.5 miles ESE of the pier head at Badioa. A beacon stands on the N reef. A reef which dries, also marked by a beacon, lies 2.75 miles ESE of the pier head and a 4.5m patch lies 0.5 mile E of this beacon. Karang Torea (Torea), a drying reef, lies 2.5 miles SE of Tanjung Tippoeloewe and another reef which dries, lies about 2 miles farther SE.

This latter reef is marked by a lighted beacon.

Directions.—From the anchorage off Sindjai, steer course 029˚, rounding a beacon situated on the E side of a reef, 2

miles SSE of Tanjung Ancu. When close E of the beacon, steer for the islet 5 miles N of Pulau Beloppo until Pulau Beloppo bears 312˚. Alter course to the NE to pass W of the beacon on the NW side of Karang Tenghai (Tenghai), a reef lying about 5.5 miles S of Tanjung Salangketo. When Gunung Cinnung bears 316˚, the course is 003˚.

This course leaves a beacon, 3.5 miles S of Tanjung Patiro, on the port hand and a beacon, 1.5 miles E of Tanjung Patiro, on the starboard hand. From abreast Tanjung Patiro the course is 342˚. This course passes over a 7m patch, 2 miles NNE of Tanjung Patiro. When the vessel is about 2 miles S of Karang Torea a W course may be steered for the anchorage off Badioa, passing about 0.75 mile N of the beacon situated 2.75 miles ESE of the pier head.

For vessels continuing N, when about 1.75 miles S of Karang Torea, course may be altered to the NE passing about 0.75 mile N of a drying reef and S of a beacon marking the E extremity of Karang Torea. When clear of the beacon, steer a course as required for desired destination.

Uncharted dangers may exist along this suggested route and local knowledge is essential.

Tanjung Tippoeloewe (Tanjung Tippuluwe) (4˚29'S., 120˚23'E.) is a high, rocky promontory 4.5 miles N of Badioa. It appears as an island from the E and N. The coast, to a point 2.75 miles NW, is high with some tall trees which are particularly noticeable from the N. The coast to a river delta 6 miles farther N is low, mainly fronted by mangroves, and backed by a wooded and paddy field covered plain.

8.83 Palima (4˚20'S., 120˚22'E.) (World Port Index No. 52290) is an important trading place situated 2 miles above the river's entrance. There is a custom's officer and a port captain in the village.

In the Northwest Monsoon there is good anchorage in 9 to 11m off the central mouth of the river delta. The mouths of the river can only be seen when close under the coast, but Gunung Tafelberg (Tafelberg), about 9 miles W, is a useful guide.

In the approach to the anchorage, vessels should pass S of Karang Tobako (Tobako), lying about 3.5 miles ESE of the river delta. The reef is marked by a beacon. The beacon should be passed not less than 0.3 mile distant, taking care to avoid a 5.8m patch lying 1.5 miles SE.

Tanjung Lokoloko (3˚44'S., 120˚26'E.) lies 36 miles N of Palima. The intervening coast between these two points is a mudbank, occasionally mixed with coral, which dries 1 to 2 miles offshore.

Numerous reefs lie within the charted 183m curve. It is possible more may exist than is shown on the chart. By keeping E of 120˚32'E, vessels will pass outside these dangers. Only those lying near the charted 183m curve can be plainly seen. There are frequently areas of false discoloration outside this curve.

From Palima to Tanjung Lokoloko there are a few villages on the coast, which is low, fronted by mangroves, and backed by a wide plain covered with paddy fields.

There are no distinctive features on or within the coast except a large tree 3.25 miles SSW of Tanjung Lokoloko.

Tanjung Lokoloko and Tanjung Siwa, about 3 miles N, are low and wooded.

Between **Tanjung Siwa** (3˚41'S., 120˚26'E.) and Tanjung Jene, about 26 miles N, the 183m curve lies close to the shore. From a position about 1 mile E of Tanjung Siwa, the 183m curve gradually edges away to about 5 miles E of Tanjung Jene, then turns NE and E across Teluk Bone.

Pasi Belongka (3˚32'S., 120˚26'E.) lies near the 183m curve, 9 miles N of Tanjung Siwa. Karang Lamunre (Lamoenre), with a depth of 3.5m, lies 8 miles NNE of Pasi Belongka.

Anchorage.—Anchorage may be taken N of Tanjung Siwa in a depth of 9.1m. Anchorage may also be taken off Tanjung Polo, 9.5 miles N of Tanjung Siwa, in a depth of 18.3m. The anchorage off Tanjung Polo should be approached N of Pasi Belongka.

The head of Teluk Bone, between Tanjung Jene and Tanjung Tobaku, about 28.5 miles ESE, is encumbered with reefs in its E part, inside the 183m curve. The land is low and flat in the NW part, the mouths of the streams affording the only landmarks. In the N part, ridges from the massive Pegunungan Tambuke approach the coast.

The low plain E has several scattered hills, the most noticeable being Maliowo, with a sharp peak 401m high, and Krambua 198m high.

8.84 Tanjung Jene (Tanjung Djenemedjai) (3˚15'S., 120˚25'E.) is a low point of land with a reef that dries extending NE. A light marks the NE extremity of the reef.

The coast between Tanjung Jene and Palopo, a town about 20.5 miles NNW, is low and marshy.

An obstruction lies 2 miles NE of **Tanjung Bua** (Tanjung Boea) (3˚03'S., 120˚15'E.).

Karang Bali (Bali Riffen) (3˚10'S., 120˚36'E.), a group of drying reefs, lies near the edge of the 183m curve in a position about 12 miles ENE of Tanjung Jene.

Karang Naber (Naber Riffen), a group of drying reefs, is located about 10 miles NNE of Tanjung Jene.

Karang Bron (Bron Rif), a drying reef, lies about 9 miles N of Tanjung Jene.

The sea is discolored by the rivers in this area. After heavy rains, thick tree trunks are carried far out to sea.

An 11m patch was reported 4 miles NNE of Tanjung Jene.

Tanjung Jene should be given a wide berth as a constant E current has been reported in the vicinity of Karang Bron.

Teluk Palopo (Palopo Bay) (2˚59'S., 120˚13'E.), located in the NW corner of the head of Teluk Bone, is surrounded by mountains decreasing in height to the E.

Pulau Libukan, a rocky islet about 62m high, lies on the broad bank extending from the N side of the bay and stands out clearly against the background.

The large town of Palopo, consisting of a collection of villages, is situated on both banks of a river. There is a doctor and a hospital at Palopo.

A stone breakwater, exhibiting a light, extends about 0.9 mile ENE from the shore near the mouth of the river.

There is a tower on the head of the breakwater. A small concrete pier, 57.5m long with a depth of 7m alongside, lies close to the breakwater.

A dangerous wreck, the position of which is approximate, lies about 1 mile E of the head of the breakwater.

There are several reefs in the bay which are not marked by discoloration. Batu Labue, a reef in the S part of the bay, lies

about 2.25 miles NNW of Tanjung Bua. A 0.4m patch lies 1.75 miles SSE of Batu Labue.

Vessels can take anchorage about 0.5 mile ENE of the stone breakwater in a depth of 11m. Smaller vessels can anchor closer inshore in a depth of 7m. The holding ground is good.

The coast between Teluk Palopo and Teluk Usu, about 50 miles NE, is low with a drying bank of mud and sand. There are occasional coral reefs, extending offshore about 0.75 mile, along the entire coast. The water is murky and muddy from 4 to 5 miles from the coast.

Vessels with local knowledge can take anchorage in a position E of the reefs off the mouth of the **Sungai Wotu** (Sungai Wotoe) (2˚38'S., 120˚48'E.). It is approached by steering for a conspicuous clump of trees near the mouth, bearing 326˚. The channel is marked on either side by beacons. There is a small drying reef S of the channel. The large village of Wotu is situated about 2 miles upriver.

Teluk Usu (Oesoe Baai) (2˚40'S., 121˚02'E.) lies in the NE corner of Teluk Bone. The E side of the bay is foul. The middle of the bay is free of dangers with depths of 28 to 37m. The Sungai Usu discharges in the N part of the bay.

Pulau Bulubulu lies 0.4 mile W of **Tanjung Bulubulu** (2˚48'S., 120˚59'E.), the S entrance point of the bay. The channel between the island and the point is about 0.3 mile wide and safe.

Malili, a large and important village, is a collecting place for forest products and the seat of a civil administrator. It lies upriver on the Sungai Malili, about 3 miles above its junction with the Sungai Usu.

8.85 **Mangkasa Oil Terminal** (2˚44'S., 121˚04'E.) (World Port Index No. 52235) is about 8 miles ENE of Pulau Bulubulu. A system of Four Buoy Moorings (FBMS) can accommodate tankers up to 20,000 dwt. Maximum draft is about 9.4m, with an overall length of 183m. Advanced notice of arrival must be given 72 hours prior to arrival and confirmed or amended 48 hours and 24 hours prior to arrival.

A shoal, with a depth of 0.9m, lies S of the entrance to Sungai Usu leaving a channel on either side.

Vessels with local knowledge can take anchorage off the mouth of the Sungai Usu in a depth of not less than 20m. There is a choppy and difficult sea with the river in flood and the wind from seaward.

The coast between Tanjung Bulupulu and Tanjung Tabako, about 38 miles S, forms numerous small bays of little importance.

Except for the reefs, there is deep water until close inshore.

The coast between Teluk Usu and **Pulau Sapiri** (3˚02'S., 121˚03'E.) is high with a mountain ridge close to the shore. The coast is sparsely populated and Lelewau (Lelewaoe), situated 13.5 miles SSE of Tanjung Bulubulu, is the only village of any importance.

The coast between Pulau Sapiri and Tanjung Tabako is low and more populated, the high mountains lying some distance inland.

Caution.—A large number of coral reefs, mostly drying and of small circumference, lie close to the 183m curve. Navigation in this part of Teluk Bone should be avoided.

8.86 The E coast of Pulau Selajar lies 9 miles S of Tanjung Lassa, the SW entrance point of Teluk Bone, and is separated from that point by Selat Selajar.

The mountains rise almost vertically from the sea giving the coast a rocky aspect with a few interruptions by sandy beaches.

Gunung Barugaiya (Baroegaija) (6˚02'S., 120˚33'E.), the highest peak on the island, rises to 696m about 16 miles S of the island's N extremity. There are other charted peaks on the island which may be seen in the offing.

The bottom near the coast is steep except near Ujung Apatana, at the S extremity of the island, where the emerging spots of coral and rocks are reported to be very narrow, and are entirely absent along the middle of the island.

Navigation along the coast is easy but should not be attempted in the East Monsoon.

Anchorage along the coast is not recommended because of the steep bottom and the extreme difficulty of approach.

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